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# A Fish Habitat Survey Of The Jacquet River Watershed, Restigouche County, N.B. Volume 1: Hydraulic and Physiographic Data

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by

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## ABSTRACT

Conlon, J, and D. Haché, 1989. A Fish Habitat Survey of the Jacquet River Watershed, Restigouche County, N.B. Volume 1 Hydraulic and Physiographic Data. Can. Data Rep. Fish. Aquat. Sci. 724 (Vol.1), 132p.

This report, Volume 1 of a four volume series, is a compilation of physiographic and hydraulic data obtained from the Jacquet River watershed during August, 1984. Principal information concerning stream cross-sections, unit discharge and bed load material is presented. General physiographic data are summarized. Other topics are :

Volume 2 - Water and Sediment Chemistry Data
Volume 3 - Estimated Fish Densities and Biological Data for Salmonid Specimens
Volume 4 - Species Composition and Relative Abundance of Benthic Macro-invertebrates

## RESUMÉ

Conlon, J, and D. Haché, 1989. A Fish Habitat Survey of the Jacquet River Watershed, Restigouche County, N.B. Volume 1 Hydraulic and Physiographic Data. Can. Data Rep. Fish. Aquat. Sci. 724 (Vol.1), 132p.

Ce rapport, le premier d'une série de quatre volumes, consiste d'une compilation de données physiographiques et hydrauliques obtenues de la ligne de partage des fonds de la rivière Jacquet en août 1984. L' information principale présentée se rapporte aux coupes transversales de cours d'eau, au rejet d'unité et aux matériaux de fond. Des données physiographiques générales sont résumées sommairement. D'autres sujets sont:

Volume 2 - Water and Sediment Chemistry Data
Volume 3 - Estimated Fish Densities and Biological Data for Salmonid Specimens
Volume 4 - Species Composition and Relative Abundance of Benthic Macro-invertebrates

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## INTRODUCTION

The Jacquet River, a medium sized salmon stream approximately 50 km in linear length in Restigouche Co., New Brunswick contains ideal spawning and rearing habitat for Atlantic Salmon *(Salmo salar)*. With the exception of logging activity, the watershed is largely undeveloped. In 1965, Brunswick Mining and Smelting, Ltd. installed a water intake structure approximately 2 km from the mouth of the Jacquet River. They are presently operating on a water license from the New Brunswick Department of Fisheries and Environment (now the N.B. Dept. of Municipal Affairs and Environment). This license, renewed in 1974, expiring in 1979 and not since renewed, entitles them to withdraw 39312 cu. meters/day for their consumption in the lead smelter and the fertilizer plant as well as for domestic use in two adjacent town sites in Belledune.

Five previous studies of the river have been undertaken within the last twenty years. Three were qualitative in scope offering visual descriptions of available habitat and fish present (Smith 1956, N.B.D.N.R. (unpublished 1969 report), and IEC Beak 1984). Two studied the microhabitat requirements of salmon in the area downstream from the water intake station (Morantz 1983, IEC Beak 1982). None of these studies presented quantitative data for water or sediment quality or hydrology.

In August, 1984, the Gulf Region's Fish Habitat Division conducted a survey on the Jacquet River to determine site-specific baseline conditions for hydrology, water chemistry, sediment chemistry, fish and macro-invertebrate populations, and habitat quality. The area of study consisted of 24 sites along the main stem of the river and seven of its major tributaries: Big Hole Brook, Antinouri Lake Brook, Lower South Branch, Lower McNair Brook, Upper South Branch, Upper McNair Brook and Rocky Brook.

This report, the first in a series of four data reports, presents the physiographic and hydraulic survey data collected on this survey.

## MATERIALS AND METHODS

### Study Sites

Twenty study sites were pre-selected in the office by biological, engineering and field technical staff with the aid of 1:50,000 topographic maps, 1:10,000 and 1:20,000 orthophotographic maps and aerial photographs flown for this study. Two sites were selected to coincide with the referenced IEC Beak (1984) and Morantz (1983) studies. These were representative of the two largest stream orders of the Jacquet River watersheds. All streams were ordered according to Strahler (1957). The dendritic pattern of the drainage basin was reflected in the selection of a large number of smaller order streams. As a result, these comprised the bulk of the remaining study sites. In the field, some sites were relocated because of access problems and an additional four sites were selected.

### Procedures

Upon arrival at a site, barrier nets were erected to delimit the fish sampling area. Survey transects were then established above, within and below this area. Data were obtained using a Geocon self-leveling engineers level, employing plane survey techniques. Elevations were referenced to arbitrary datum. Distances were measured with survey tapes as well as optical range finders.

Water velocity data were obtained by means of either a Teledyne Gurley No. 622 Price Current Meter Type AA or where shallow conditions or low velocities warranted, a No. 625 Pygmy Type Current Meter suspended on a top setting wading rod. The depth of immersion was consistent with accepted practice; single reading at 60% depth measured from the surface for water less than one meter deep and dual readings at 20% and 80% depth measured from the surface for water depth greater than one meter. Revolutions of the bucket wheel were counted for preselected periods at regular intervals across a transect and recorded on the site investigation form. Velocities were computed using rating tables supplied by the equipment manufacturer.

Flow volumes were calculated for each study reach using ASTM Standard practice for open channel flow measurement of water by the velocity-area method (Designation: D 3858-79). Bedload material was sampled using the random walk method.

## RESULTS

Survey results are summarized and presented in graphic and tabular form. Prevailing flows were calculated and are tabulated. Bedload material sampled has been ranked according to its mean axis dimension.

## ACKNOWLEDGEMENTS

The authors thank Larry Haight whose figures form a coherent medium for the presentation of the data collected. The efforts of Daniel Caissie were invaluable in both the preparatory and field portions of this project.

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FIG. 1.1 LOCATION OF SAMPLING SITES, JACQUET RIVER WATERSHED, AUGUST 1984

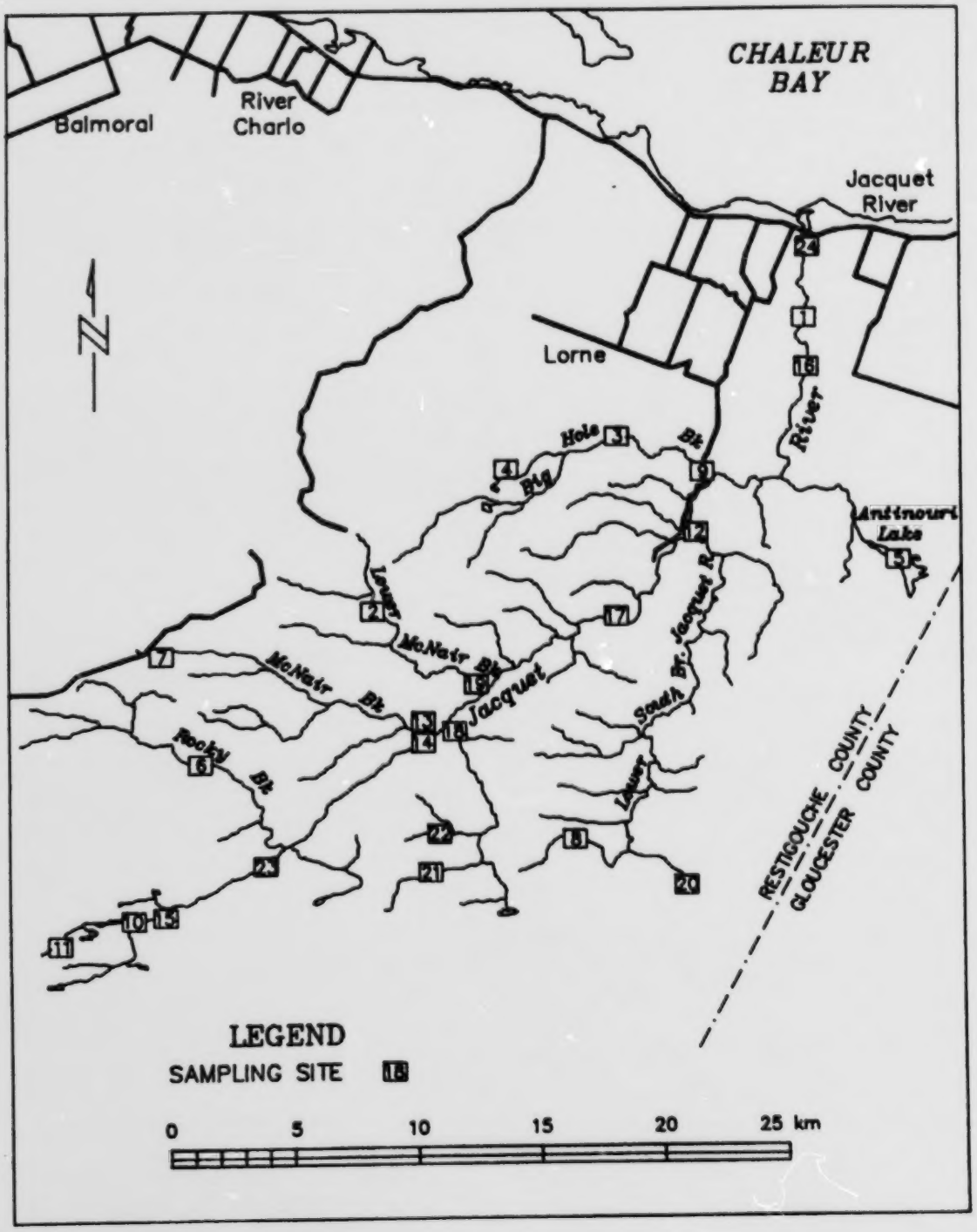


FIG. 1.2 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 1, JACQUET RIVER, AUGUST 9,1984

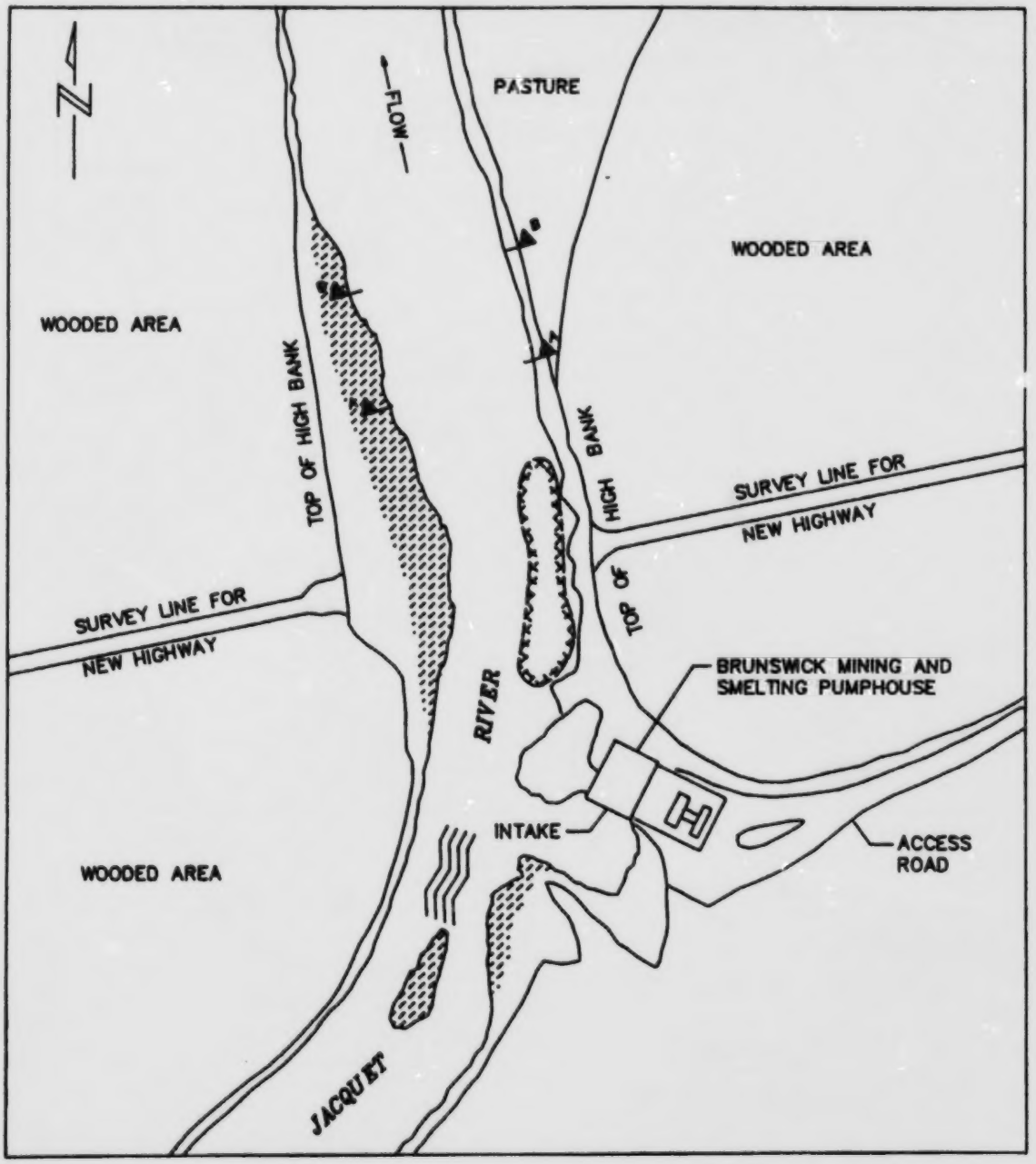


TABLE 1.1 General Site Observations and Remarks
SITE 1, JACQUET RIVER, August 9, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 0930-2000 |
| Weather | sunny |
| Air temperature (°C) | 26 |
| Electroseining conditions | difficult, strong current |
| Instream cover | rocks |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 5/55/40 |
| Features (estimate,%) | riffle/run - 30/70 |
| Aquatic vegetation | nil |
| Stream cover | open, wide section of stream |
| Banks | stable |
| Shoreline vegetation | not noted |
| Surrounding terrain | pasture, mixed forest |
| Pollution sources | none identified |
| Resource utilization | water abstraction<br>swimming<br>canoeing |
| Order stream | 5 |
| Photographic series | FHD 84-8-NB-10 to 21 |
| General | site of proposed hwy. 11 bridge |

FIG. 1.3 STREAM CROSS-SECTIONS, SITE 1, JACQUET RIVER AUGUST 9,1984

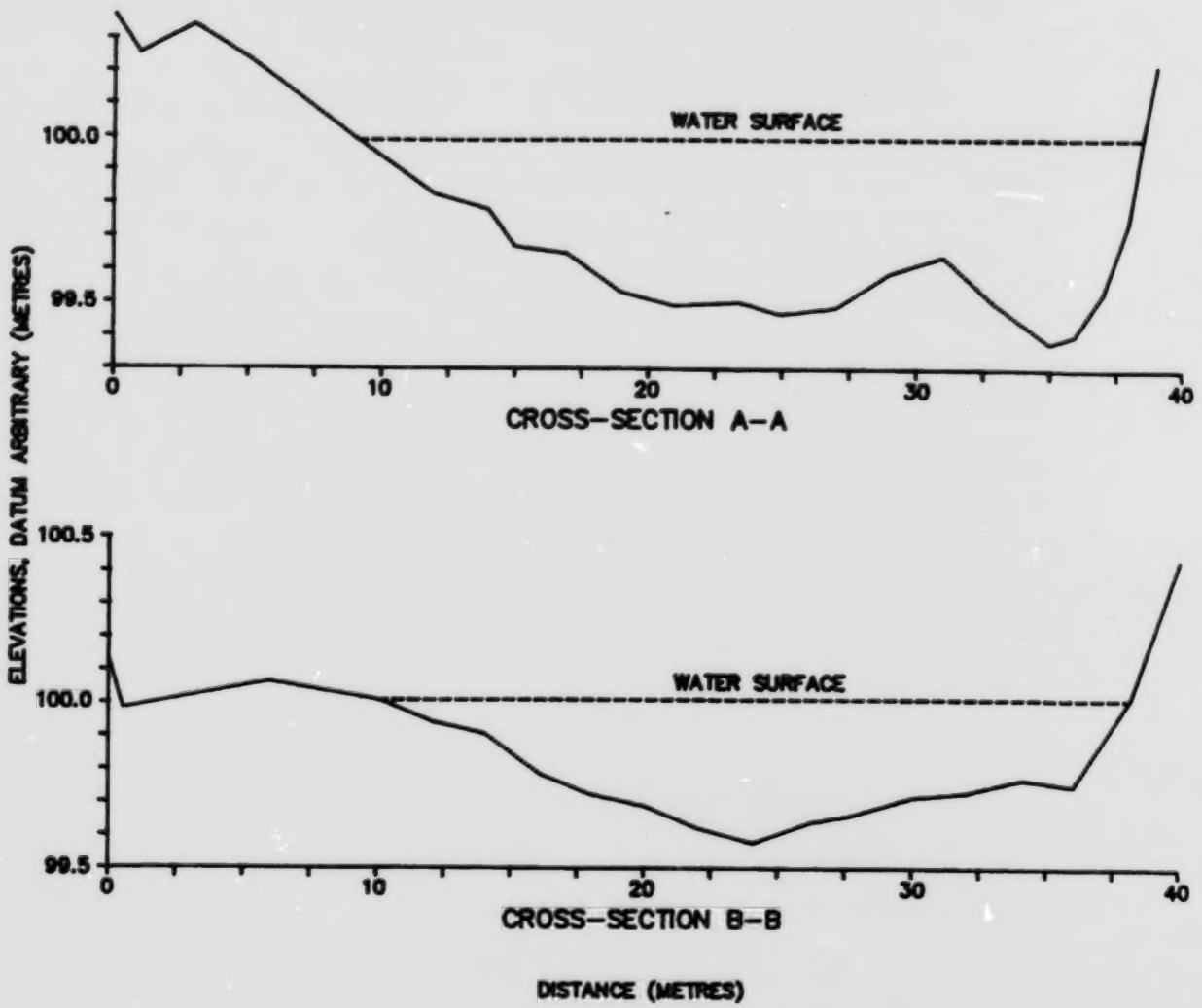


TABLE 1.2 Cross-Sectional Measurements, Transect A-A
SITE 1, JACQUET RIVER, August 9, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.250 | 100.38 | Bank Full-Assumed |
| 1.0 | 1.370 | 100.26 | |
| 3.0 | 1.278 | 100.35 | |
| 5.0 | 1.385 | 100.24 | |
| 9.0 | 1.632 | 100.00 | Top/edge water |
| 12.0 | 1.787 | 99.84 | |
| 14.0 | 1.842 | 99.79 | |
| 15.0 | 1.952 | 99.68 | |
| 17.0 | 1.977 | 99.65 | |
| 19.0 | 2.092 | 99.54 | |
| 21.0 | 2.132 | 99.50 | |
| 23.5 | 2.132 | 99.50 | |
| 25.0 | 2.162 | 99.47 | |
| 27.0 | 2.142 | 99.49 | |
| 29.0 | 2.042 | 99.59 | |
| 31.0 | 1.992 | 99.64 | |
| 33.0 | 2.132 | 99.50 | |
| 35.0 | 2.252 | 99.38 | |
| 36.0 | 2.232 | 99.40 | |
| 37.0 | 2.102 | 99.53 | |
| 38.0 | 1.882 | 99.75 | |
| 38.5 | 1.630 | 100.00 | Top/edge Water |
| 39.0 | 1.412 | 100.22 | Bank Full Assumed |

Drainage Area Tributary to Site: 505.5 $Km^2$

TABLE 1.3 Cross-Sectional Measurements, Transect B-B
SITE 1, JACQUET RIVER, August 9, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.585 | 100.12 | Bank Full Assumed |
| 0.5 | 1.910 | 99.80 | |
| 6.0 | 1.652 | 100.06 | |
| 10.0 | 1.710 | 100.00 | Top/edge Water |
| 12.0 | 1.770 | 99.94 | |
| 14.0 | 1.805 | 99.90 | |
| 16.0 | 1.932 | 99.78 | |
| 18.0 | 1.994 | 99.72 | |
| 20.0 | 2.030 | 99.68 | |
| 22.0 | 2.090 | 99.62 | |
| 24.0 | 2.140 | 99.57 | |
| 26.0 | 2.085 | 99.63 | |
| 28.0 | 2.046 | 99.66 | |
| 30.0 | 2.012 | 99.70 | |
| 32.0 | 1.990 | 99.72 | |
| 34.0 | 1.952 | 99.76 | |
| 36.0 | 1.973 | 99.74 | |
| 38.0 | 1.705 | 100.00 | Top/Edge Water |
| 40.0 | 1.287 | 100.42 | Bank Full Assumed |

TABLE 1.4 Water Velocity and Unit Discharge
SITE 1, JACQUET RIVER, August 9, 1984

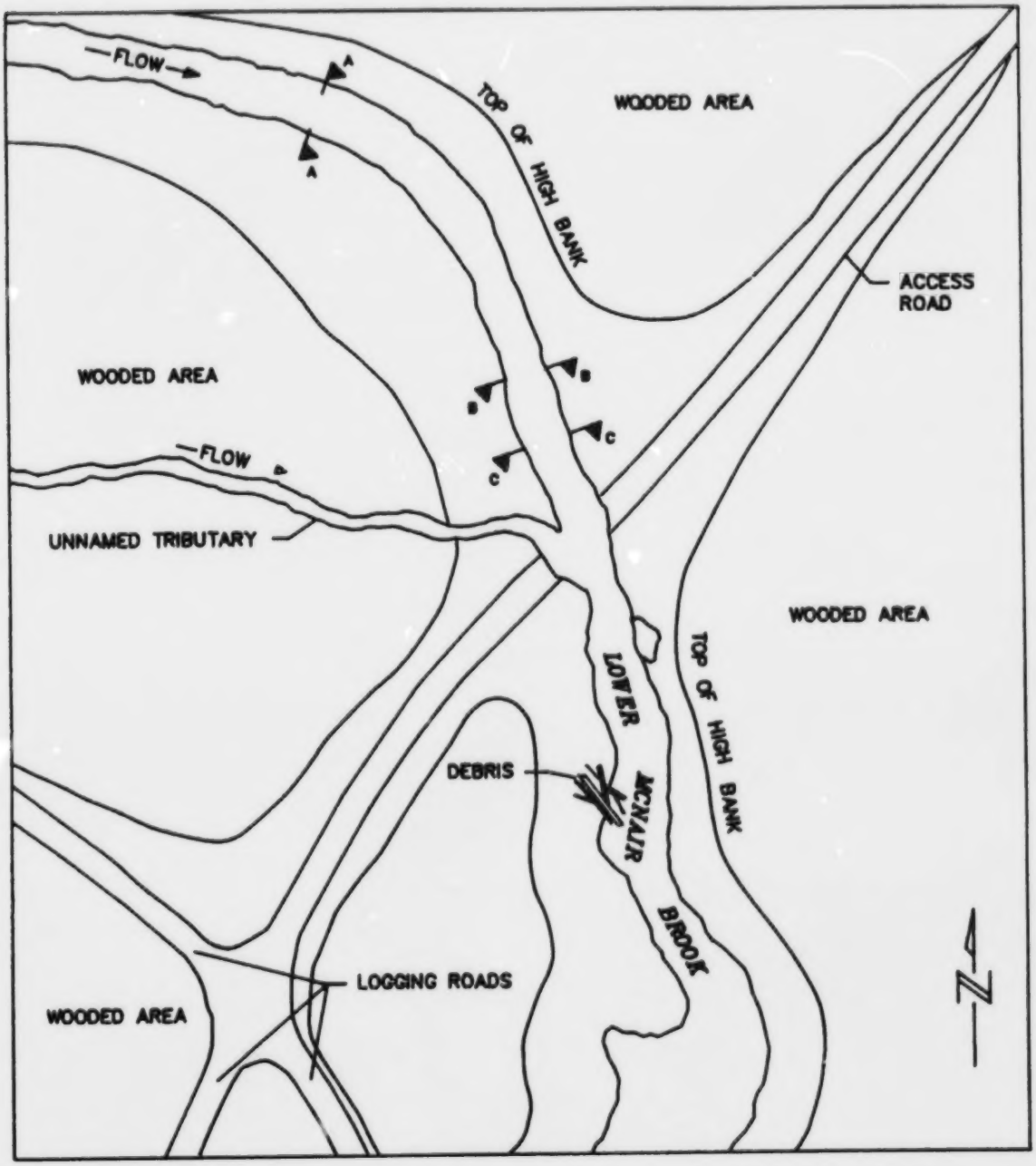
| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(1) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 10.0 | 0.00 | 0.0 | 0.0 | 0.0 |
| 12.0 | 0.15 | 9.0 | 0.205 | 0.063 |
| 14.0 | 0.21 | 4.0 | 0.094 | 0.029 |
| 15.0 | 0.32 | 13.0 | 0.294 | 0.141 |
| 17.0 | 0.34 | 14.5 | 0.327 | 0.225 |
| 19.0 | 0.46 | 15.0 | 0.338 | 0.311 |
| 21.0 | 0.50 | 18.0 | 0.404 | 0.454 |
| 23.5 | 0.50 | 21.0 | 0.471 | 0.471 |
| 25.0 | 0.53 | 19.5 | 0.438 | 0.406 |
| 27.0 | 0.51 | 16.0 | 0.360 | 0.367 |
| 29.0 | 0.42 | 17.0 | 0.382 | 0.320 |
| 31.0 | 0.36 | 16.5 | 0.371 | 0.267 |
| 33.0 | 0.50 | 18.0 | 0.405 | 0.405 |
| 35.0 | 0.62 | 15.0 | 0.338 | 0.314 |
| 36.0 | 0.60 | 15.5 | 0.349 | 0.209 |
| 37.0 | 0.47 | 16.5 | 0.371 | 0.174 |
| 38.0 | 0.25 | 4.0 | 0.095 | 0.035 |
| 40.0 | 0.00 | 0.0 | 0.0 | 0.0 |

$Q = \Sigma q = 4.19$ $m^3/S$
(1) Price AA Wheel

TABLE 1.5 Mean Diameter and Ranking of Bed Load Material
SITE 1, JACQUET RIVER, August 9, 1984

| Sample No. | Axis Measurements (cm) | | | Mean Dimension | Rank |
|---|---|---|---|---|---|
| | x | y | z | $\phi$ (cm) | |
| 1 | 16 | 20 | 10 | 15 | 20 |
| 2 | 10 | 05 | 06 | 07 | 2 |
| 3 | 18 | 08 | 20 | 15 | 21 |
| 4 | 17 | 06 | 14 | 12 | 10 |
| 5 | 23 | 09 | 18 | 17 | 28 |
| 6 | 21 | 10 | 15 | 15 | 22 |
| 7 | 32 | 16 | 04 | 17 | 29 |
| 8 | 08 | 05 | 05 | 06 | 1 |
| 9 | 16 | 12 | 04 | 11 | 6 |
| 10 | 16 | 16 | 09 | 14 | 17 |
| 11 | 14 | 08 | 16 | 13 | 12 |
| 12 | 20 | 05 | 13 | 13 | 13 |
| 13 | 16 | 10 | 08 | 11 | 7 |
| 14 | 18 | 15 | 15 | 16 | 24 |
| 15 | 28 | 10 | 14 | 17 | 30 |
| 16 | 22 | 13 | 06 | 14 | 18 |
| 17 | 23 | 17 | 08 | 16 | 25 |
| 18 | 16 | 08 | 06 | 10 | 5 |
| 19 | 09 | 05 | 10 | 08 | 3 |
| 20 | 18 | 13 | 07 | 13 | 14 |
| 21 | 16 | 20 | 08 | 15 | 23 |
| 22 | 14 | 10 | 08 | 11 | 8 |
| 23 | 22 | 19 | 07 | 16 | 26 |
| 24 | 10 | 07 | 07 | 08 | 4 |
| 25 | 14 | 19 | 06 | 13 | 15 |
| 26 | 20 | 18 | 11 | 16 | 27 |
| 27 | 06 | 13 | 14 | 11 | 9 |
| 28 | 20 | 13 | 08 | 14 | 19 |
| 29 | 14 | 12 | 10 | 12 | 11 |
| 30 | 14 | 17 | 08 | 13 | 16 |

FIG. 1.4 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 2, LOWER MCNAIR BROOK, AUGUST 10,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 10 20 m (APPROX.)

TOPOGRAPHIC MAP 21-O/16

MILITARY GRID 052 956

TABLE 1.6 General Site Observations and Remarks
SITE 2, LOWER MCNAIR BROOK, August 10, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1100 |
| Weather | sunny, warm |
| Air temperature (°C) | 29 |
| Electroseining conditions | good |
| Instream cover | partial undercut banks<br>boulder along banks<br>large cobble throughout |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 20/40/40 |
| Features (estimate,%) | riffle/run - 80/20 |
| Aquatic vegetation | submergent, primarily mosses on rock |
| Stream cover | partly open |
| Banks | stable |
| Shoreline vegetation | riparian grasses, alder |
| Surrounding terrain | upland conifer - spruce, balsam fir |
| Pollution sources | logging activity |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic series | FHD 84-8-NB-22 to 38 |
| General | turbidity noted from fording by timberjack, reflected in water quality data |

FIG. 1.5 STREAM CROSS-SECTIONS, SITE 2, LOWER MCNAIR BROOK AUGUST 10,1984

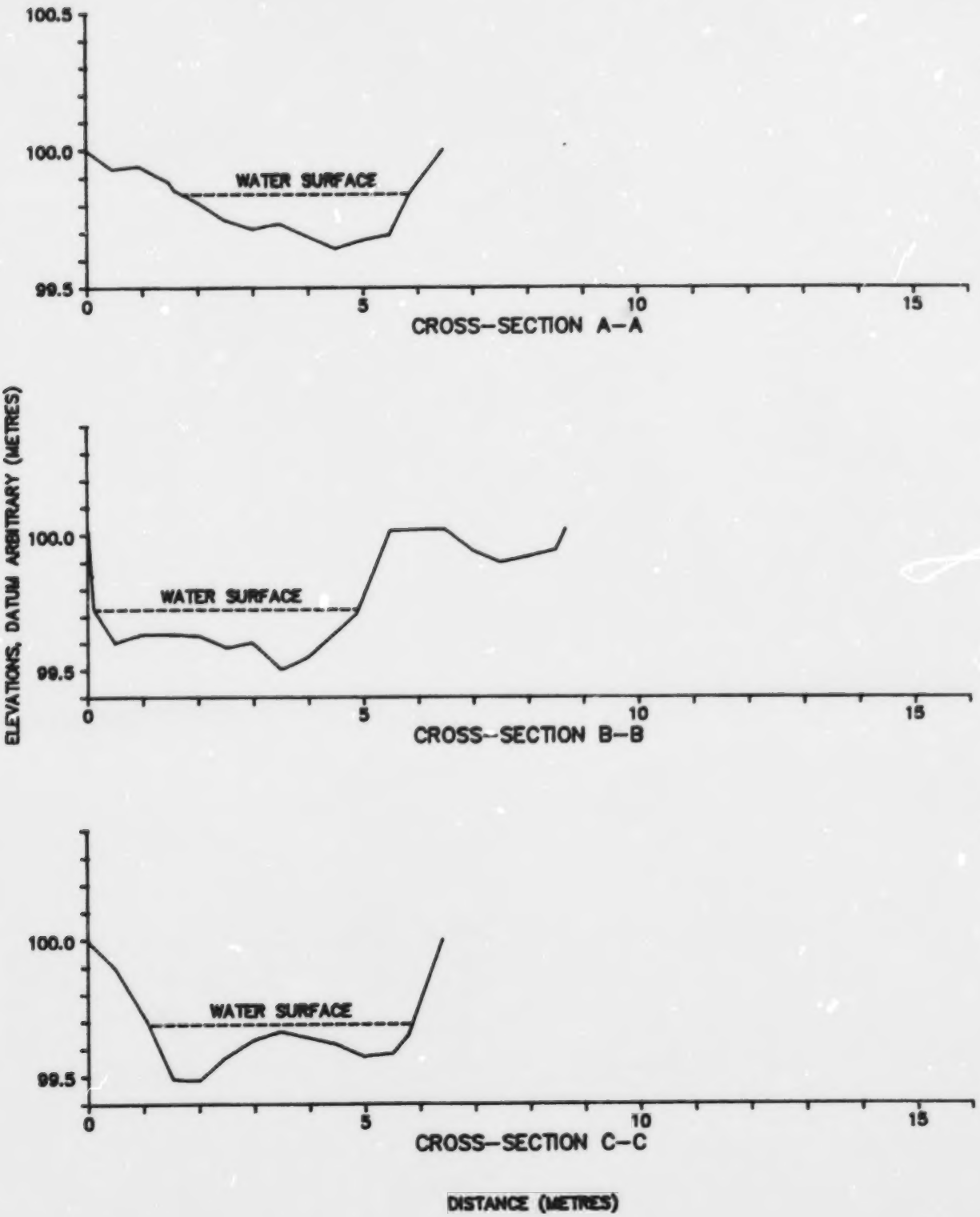


TABLE 1.7 Cross-Sectional Measurements, Transect A-A
SITE 2, LOWER MCNAIR BROOK, August 10, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.00 | 100.00 | Bank Full Assumed |
| 0.5 | 0.07 | 99.93 | |
| 1.0 | 0.065 | 99.94 | |
| 1.5 | 0.12 | 99.88 | |
| 1.6 | 0.15 | 99.85 | Top/Edge Water |
| 2.0 | 0.19 | 99.81 | |
| 2.5 | 0.26 | 99.74 | |
| 3.0 | 0.29 | 99.71 | |
| 3.5 | 0.27 | 99.73 | |
| 4.0 | 0.32 | 99.68 | |
| 4.5 | 0.36 | 99.64 | |
| 5.0 | 0.33 | 99.67 | |
| 5.5 | 0.31 | 99.69 | |
| 5.85 | 0.18 | 99.82 | Top/Edge Water |
| 6.5 | 0.00 | 100.00 | Bank Full Assumed |

Slope of Site: 1.1%

Drainage Area Tributary to Site: 14.0 $Km^2$

TABLE 1.8 Cross-Sectional Measurements, Transect B-B
SITE 2, LOWER MCNAIR BROOK, August 10, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.00 | 100.00 | Bank Full Assumed |
| 0.10 | 0.28 | 99.72 | Top/Edge Water |
| 0.50 | 0.41 | 99.59 | |
| 1.00 | 0.38 | 99.62 | |
| 1.50 | 0.38 | 99.62 | |
| 2.00 | 0.39 | 99.61 | |
| 2.50 | 0.43 | 99.57 | |
| 3.00 | 0.41 | 99.59 | |
| 3.50 | 0.51 | 99.49 | |
| 4.00 | 0.47 | 99.53 | |
| 4.90 | 0.30 | 99.70 | Top/Edge Water |
| 5.50 | 0.00 | 100.00 | Bank Full Assumed |
| 6.50 | 0.00 | 100.00 | Flood Channel |
| 7.00 | 0.07 | 99.93 | |
| 7.50 | 0.11 | 99.89 | |
| 8.00 | 0.10 | 99.90 | |
| 8.50 | 0.07 | 99.93 | |
| 8.70 | 0.00 | 100.00 | Flood Channel |

Note: Section between 6.50 and 8.70 serves as a Flood Channel.

TABLE 1.9 Cross-Sectional Measurements, Transect C-C
SITE 2, LOWER MCNAIR BROOK, August 10, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.00 | 100.00 | Bank Full Assumed |
| 0.5 | 0.11 | 99.89 | |
| 1.0 | 0.28 | 99.72 | Top/Edge Water |
| 1.5 | 0.51 | 99.49 | |
| 2.0 | 0.51 | 99.49 | |
| 2.5 | 0.43 | 99.57 | |
| 3.0 | 0.37 | 99.63 | |
| 3.5 | 0.34 | 99.66 | |
| 4.0 | 0.36 | 99.64 | |
| 4.5 | 0.39 | 99.61 | |
| 5.0 | 0.43 | 99.57 | |
| 5.5 | 0.42 | 99.58 | |
| 5.8 | 0.35 | 99.65 | Top/Edge Water |
| 6.4 | 0.00 | 100.00 | Bank Full Assumed |

TABLE 1.10 Water Velocity and Unit Discharge
SITE 2, LOWER MCNAIR BROOK
August 10, 1984

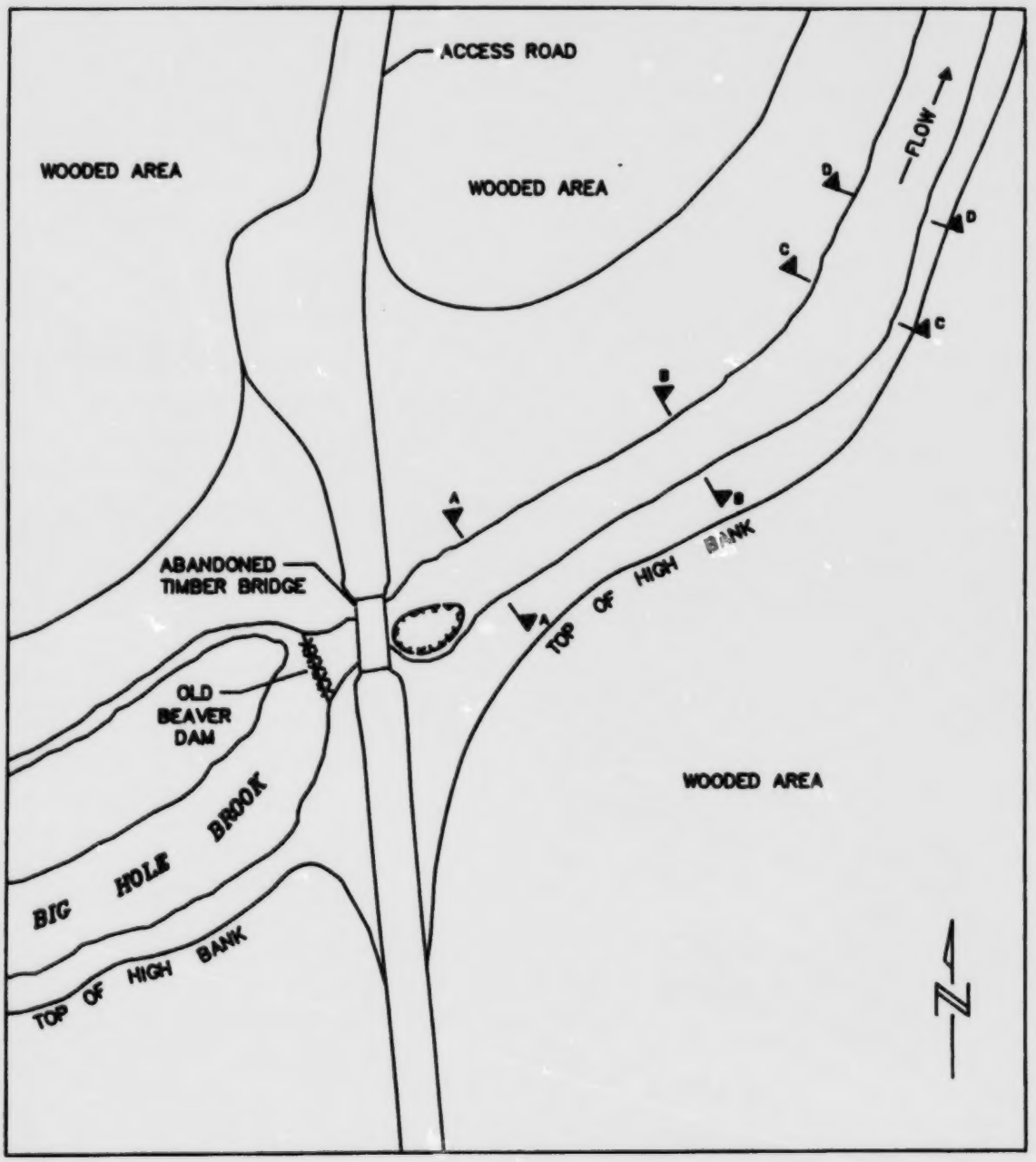
| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(1) | Water Velocity V(m/S) | Unit Discharge $q(m^3/S)$ |
|---|---|---|---|---|
| 0.0 | .275 | 14.0 * | 0.316 | .015 |
| 0.35 | .275 | 28.5 | 0.637 | .061 |
| 0.70 | .275 | 14.0 * | 0.316 | .015 |

$Q = \Sigma q = 0.09\ m^3/S$
(1) Price AA Wheel
*Estimated

TABLE 1.11 Mean Diameter and Ranking of Bed Load Material
SITE 2, LOWER MCNAIR BROOK, August 10, 1984

| Sample No. | Axis Measurements (cm) x | y | z | Mean Dimension $\phi$ (cm) | Rank |
|---|---|---|---|---|---|
| 1 | 10 | 12 | 26 | 16 | 23 |
| 2 | 14 | 09 | 03 | 09 | 4 |
| 3 | 14 | 25 | 09 | 16 | 24 |
| 4 | 15 | 07 | 06 | 09 | 5 |
| 5 | 07 | 07 | 08 | 07 | 1 |
| 6 | 06 | 07 | 08 | 07 | 2 |
| 7 | 09 | 05 | 16 | 10 | 8 |
| 8 | 18 | 13 | 10 | 14 | 19 |
| 9 | 06 | 10 | 05 | 07 | 3 |
| 10 | 14 | 12 | 12 | 13 | 15 |
| 11 | 15 | 08 | 04 | 09 | 6 |
| 12 | 20 | 12 | 07 | 13 | 16 |
| 13 | 26 | 08 | 32 | 22 | 32 |
| 14 | 21 | 11 | 05 | 12 | 10 |
| 15 | 14 | 08 | 05 | 09 | 7 |
| 16 | 15 | 25 | 10 | 17 | 28 |
| 17 | 12 | 23 | 08 | 14 | 20 |
| 18 | 11 | 06 | 15 | 11 | 9 |
| 19 | 13 | 20 | 18 | 17 | 29 |
| 20 | 23 | 15 | 09 | 16 | 25 |
| 21 | 16 | 13 | 20 | 16 | 26 |
| 22 | 13 | 13 | 09 | 12 | 11 |
| 23 | 22 | 10 | 09 | 14 | 21 |
| 24 | 18 | 07 | 10 | 12 | 14 |
| 25 | 19 | 08 | 10 | 12 | 12 |
| 26 | 10 | 16 | 11 | 12 | 13 |
| 27 | 21 | 28 | 13 | 21 | 31 |
| 28 | 16 | 20 | 13 | 16 | 27 |
| 29 | 16 | 20 | 07 | 14 | 22 |
| 30 | 14 | 11 | 15 | 13 | 17 |
| 31 | 36 | 26 | 24 | 29 | 34 |
| 32 | 15 | 16 | 07 | 13 | 18 |
| 33 | 26 | 19 | 11 | 19 | 30 |
| 34 | 27 | 40 | 17 | 28 | 33 |

FIG. 1.6 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 3, BIG HOLE BROOK, AUGUST 11,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 5 10 15 m (APPROX.)

TOPOGRAPHIC MAP 21-O/16

MILITARY GRID 139 019

TABLE 1.12 General Site Observations and Remarks
SITE 3, BIG HOLE BROOK, August 11, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1440 |
| Weather | overcast. |
| Air temperature (°C) | 25 |
| Electroseining conditions | not noted |
| Instream cover | some undercut bank |
| Bottom | not noted |
| Bottom type | not noted |
| Features | not noted |
| Aquatic vegetation | not noted |
| Stream cover | not noted |
| Banks | stable |
| Shoreline vegetation | some alder |
| Surrounding terrain | t.r. steep bank, mixed heavy forest, t.l. floodplain |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic record | FHD 84-8-NB-45 to 59<br>FHD 84-8-NB-240 to 242 |
| General | difficult access<br>beaver dam noted upstream |

FIG. 1.7 STREAM CROSS-SECTIONS, SITE 3, BIG HOLE BROOK AUGUST 11,1984

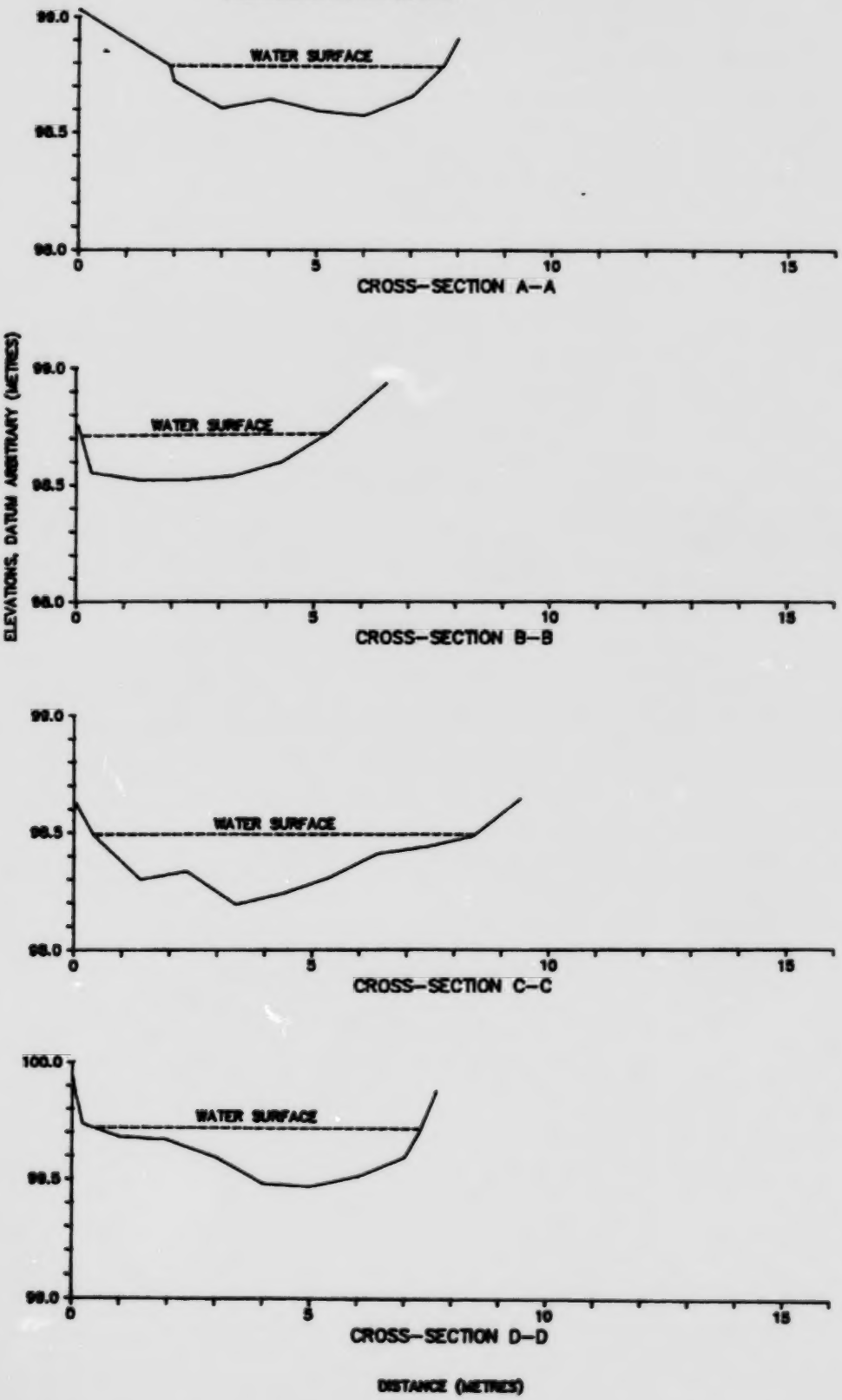


TABLE 1.13 Cross-Sectional Measurements, Transect A-A
SITE 3, BIG HOLE BROOK, August 11, 1984
(1m below Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.97 | 99.03 | Bank Full Assumed |
| 1.9 | 1.21 | 98.79 | Top/Edge Water |
| 2.0 | 1.28 | 98.72 | |
| 3.0 | 1.39 | 98.61 | |
| 4.0 | 1.35 | 98.65 | |
| 5.0 | 1.40 | 98.60 | |
| 6.0 | 1.42 | 98.58 | |
| 7.0 | 1.34 | 98.66 | |
| 7.7 | 1.20 | 98.80 | Top/Edge Water |
| 8.0 | 1.09 | 98.91 | Bank Full Assumed |

TABLE 1.14 Cross-Sectional Measurements, Transect B-B
SITE 3, BIG HOLE BROOK, August 11, 1984
(25m below Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.26 | 98.74 | Bank Full Assumed |
| 0.1 | 1.30 | 98.70 | Top/Edge Water |
| 0.3 | 1.45 | 98.55 | |
| 1.3 | 1.48 | 98.52 | |
| 2.3 | 1.48 | 98.52 | |
| 3.3 | 1.46 | 98.54 | |
| 4.3 | 1.40 | 98.60 | |
| 5.3 | 1.28 | 98.72 | Top/Edge Water |
| 6.5 | 1.07 | 98.93 | Bank Full Assumed |

TABLE 1.15 Cross-Sectional Measurements, Transect C-C
SITE 3, BIG HOLE BROOK, August 11, 1984
(at Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.37 | 98.63 | Bank Full Assumed |
| 0.4 | 1.50 | 98.50 | Top/Edge Water |
| 1.4 | 1.69 | 98.31 | |
| 2.4 | 1.66 | 98.34 | |
| 3.4 | 1.80 | 98.20 | |
| 4.4 | 1.75 | 98.25 | |
| 5.4 | 1.68 | 98.32 | |
| 6.4 | 1.58 | 98.42 | |
| 7.4 | 1.55 | 98.45 | |
| 8.4 | 1.51 | 98.49 | Top/Edge Water |
| 9.4 | 1.35 | 98.65 | Bank Full Assumed |

TABLE 1.16 Cross-Sectional Measurements, Transect D-D
SITE 3, BIG HOLE BROOK, August 11, 1984
(10m below Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.06 | 99.94 | Bank Full Assumed |
| 0.3 | 1.27 | 99.73 | Top/Edge Water |
| 1.0 | 1.32 | 99.68 | |
| 2.0 | 1.34 | 99.66 | |
| 3.0 | 1.41 | 99.59 | |
| 4.0 | 1.52 | 99.48 | |
| 5.0 | 1.53 | 99.47 | |
| 6.0 | 1.49 | 99.51 | |
| 7.0 | 1.40 | 99.60 | |
| 7.3 | 1.30 | 99.70 | Top/Edge Water |
| 7.7 | 1.12 | 99.88 | Bank Full Assumed |

Slope of Site: 0.97%

Drainage Area Tributary to Site: 33.4 $Km^2$

TABLE 1.17 Water Velocity and Unit Discharge
SITE 3, BIG HOLE BROOK, August 11, 1984

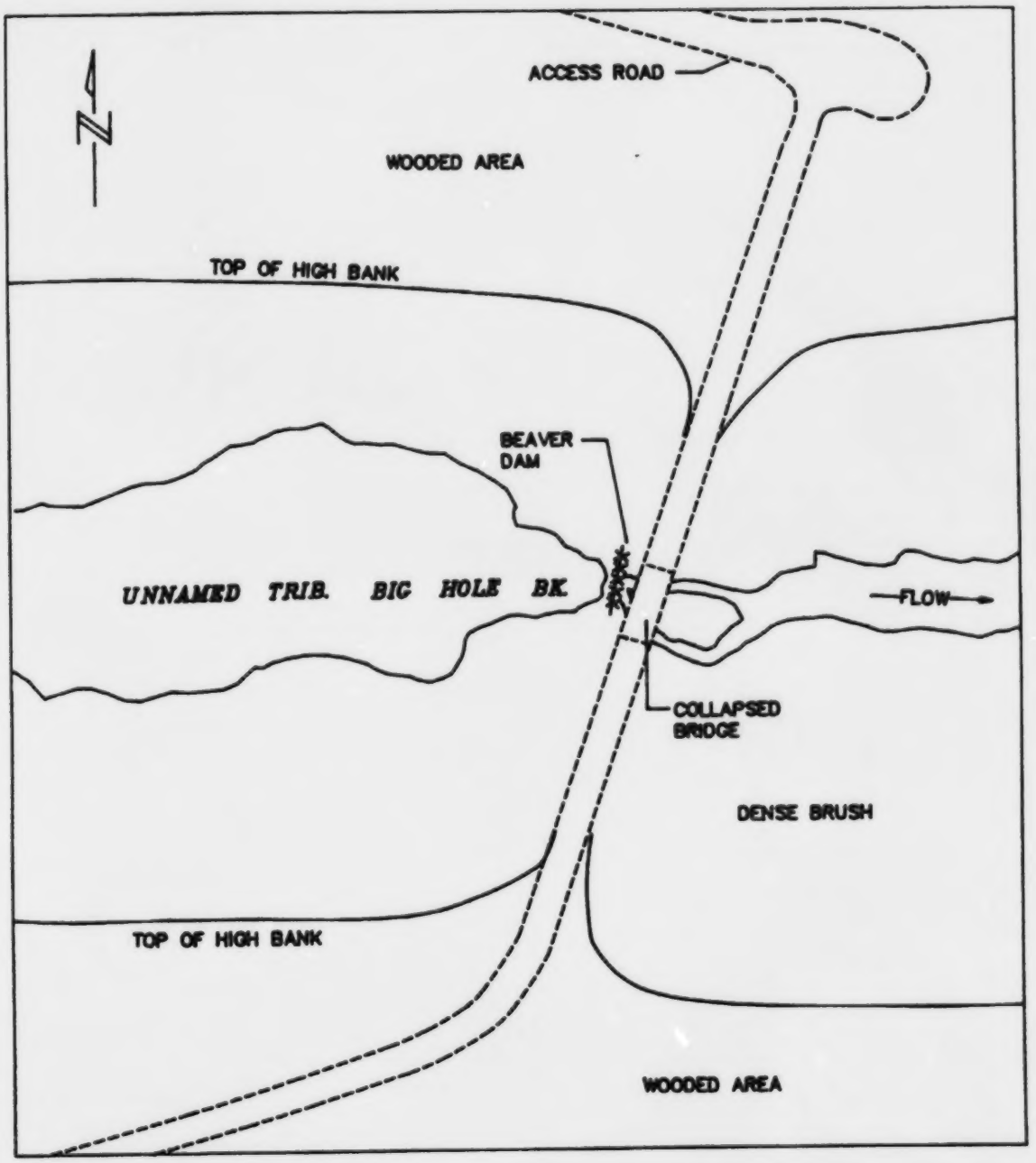
| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge $q(m^3/S)$ |
|---|---|---|---|---|
| 0.0 | 0.265 | 32.0* | 0.32 | 0.013 |
| 0.30 | 0.285 | 65.0 | 0.65 | 0.055 |
| 0.60 | 0.280 | 72.0 | 0.72 | 0.060 |
| 0.90 | 0.290 | 72.0 | 0.72 | 0.062 |
| 1.20 | 0.260 | 36.0* | 0.36 | 0.014 |

$Q = \Sigma q = 0.204\ m^3/S$
(2) Pygmy Wheel
* estimated

TABLE 1.18 Mean Diameter and Ranking of Bed Load Material
SITE 3, BIG HOLE BROOK, August 11, 1984

| Sample No. | Axis Measurements (cm) x | y | z | Mean Dimension $\phi$ (cm) | Rank |
|---|---|---|---|---|---|
| 1 | 35 | 10 | 22 | 22 | 26 |
| 2 | 55 | 25 | 17 | 32 | 31 |
| 3 | 30 | 34 | 15 | 26 | 29 |
| 4 | 23 | 17 | 12 | 17 | 17 |
| 5 | 21 | 20 | 10 | 17 | 18 |
| 6 | 20 | 17 | 08 | 15 | 11 |
| 7 | 10 | 10 | 10 | 10 | 1 |
| 8 | 25 | 09 | 10 | 15 | 12 |
| 9 | 22 | 11 | 18 | 17 | 19 |
| 10 | 20 | 14 | 11 | 15 | 13 |
| 11 | 14 | 10 | 12 | 12 | 2 |
| 12 | 15 | 13 | 10 | 13 | 4 |
| 13 | 20 | 26 | 23 | 23 | 28 |
| 14 | 13 | 15 | 10 | 13 | 5 |
| 15 | 20 | 14 | 20 | 18 | 21 |
| 16 | 27 | 14 | 12 | 18 | 22 |
| 17 | 20 | 20 | 20 | 20 | 25 |
| 18 | 18 | 14 | 12 | 15 | 14 |
| 19 | 17 | 25 | 09 | 17 | 20 |
| 20 | 18 | 17 | 09 | 15 | 15 |
| 21 | 15 | 15 | 05 | 12 | 3 |
| 22 | 23 | 23 | 10 | 19 | 23 |
| 23 | 40 | 30 | 20 | 30 | 30 |
| 24 | 15 | 17 | 10 | 14 | 7 |
| 25 | 20 | 15 | 12 | 16 | 16 |
| 26 | 27 | 14 | 15 | 19 | 24 |
| 27 | 12 | 19 | 10 | 14 | 8 |
| 28 | 45 | 40 | 15 | 32 | 32 |
| 29 | 12 | 20 | 09 | 14 | 9 |
| 30 | 10 | 20 | 12 | 14 | 10 |
| 31 | 15 | 13 | 10 | 13 | 6 |
| 32 | 15 | 30 | 20 | 22 | 27 |

FIG. 1.8 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 4, UNNAMED TRIBUTARY TO BIG HOLE BROOK, AUGUST 11,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 5 10 m (APPROX.)

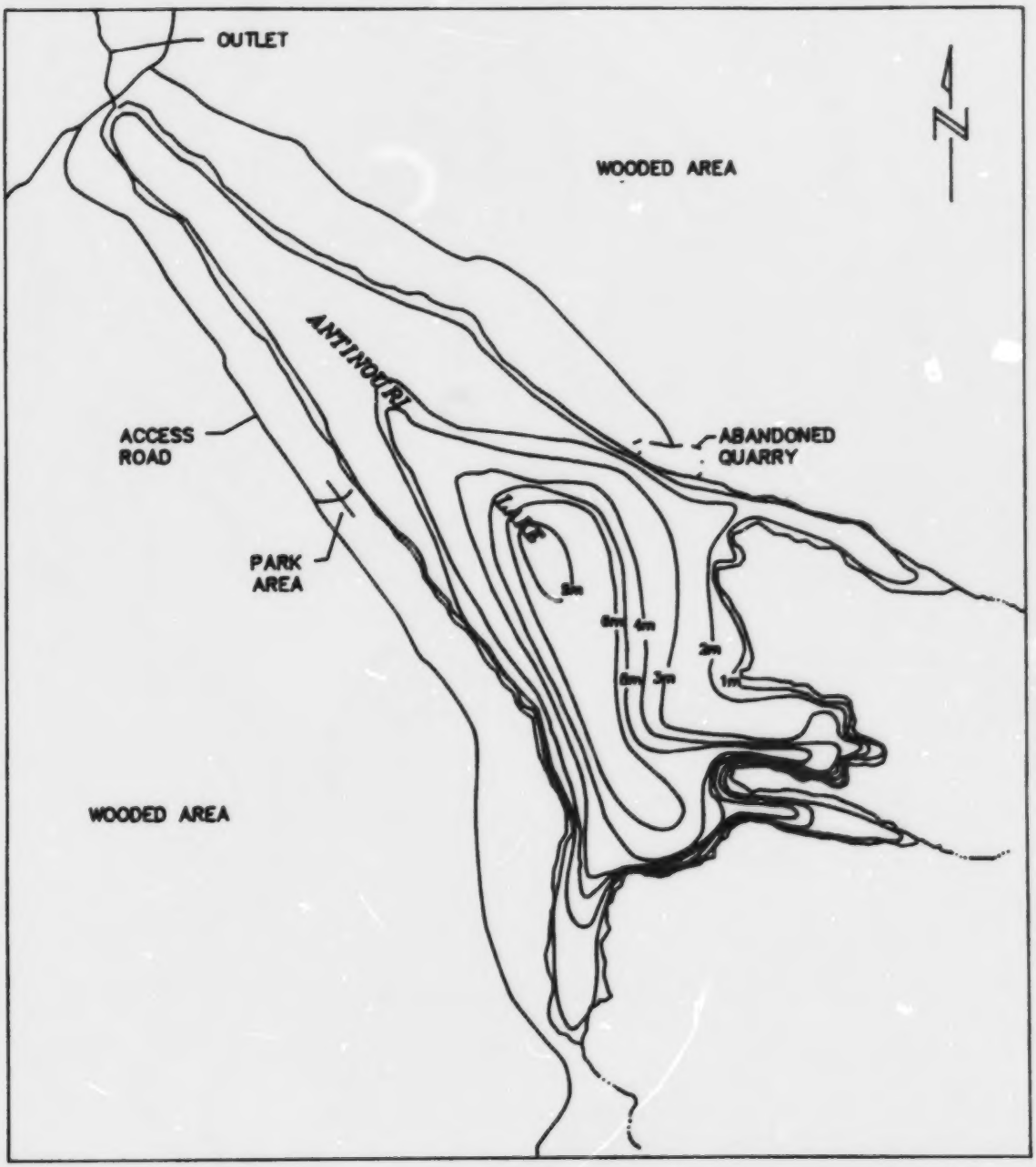
TOPOGRAPHIC MAP 21-O/16

MILITARY GRID 108 007

TABLE 1.19 General Site Observations and Remarks
SITE 4, UNNAMED TRIBUTARY to BIG HOLE BROOK
August 11, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1100 |
| Weather | overcast |
| Air temperature (°C) | 25 |
| Electroseining conditions | not conducted |
| Instream cover | dense vegetation |
| Bottom | stable |
| Bottom type (visual est.,%) | fine gravel/sand |
| Features (estimate, %) | not noted |
| Aquatic vegetation | dense |
| Stream cover | dense alder |
| Banks | stable |
| Shoreline vegetation | dense alder |
| Surrounding terrain | not noted |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 1 |
| Photographic record | FHD-84-8-NB-39 to 44 |
| General | small stream est. 1m wide beaver dam, small fish rising in beaver pond, frogs present |

FIG. 1.9 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 5, ANTINOURI LAKE, AUGUST 12,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 200 400 m (APPROX.)

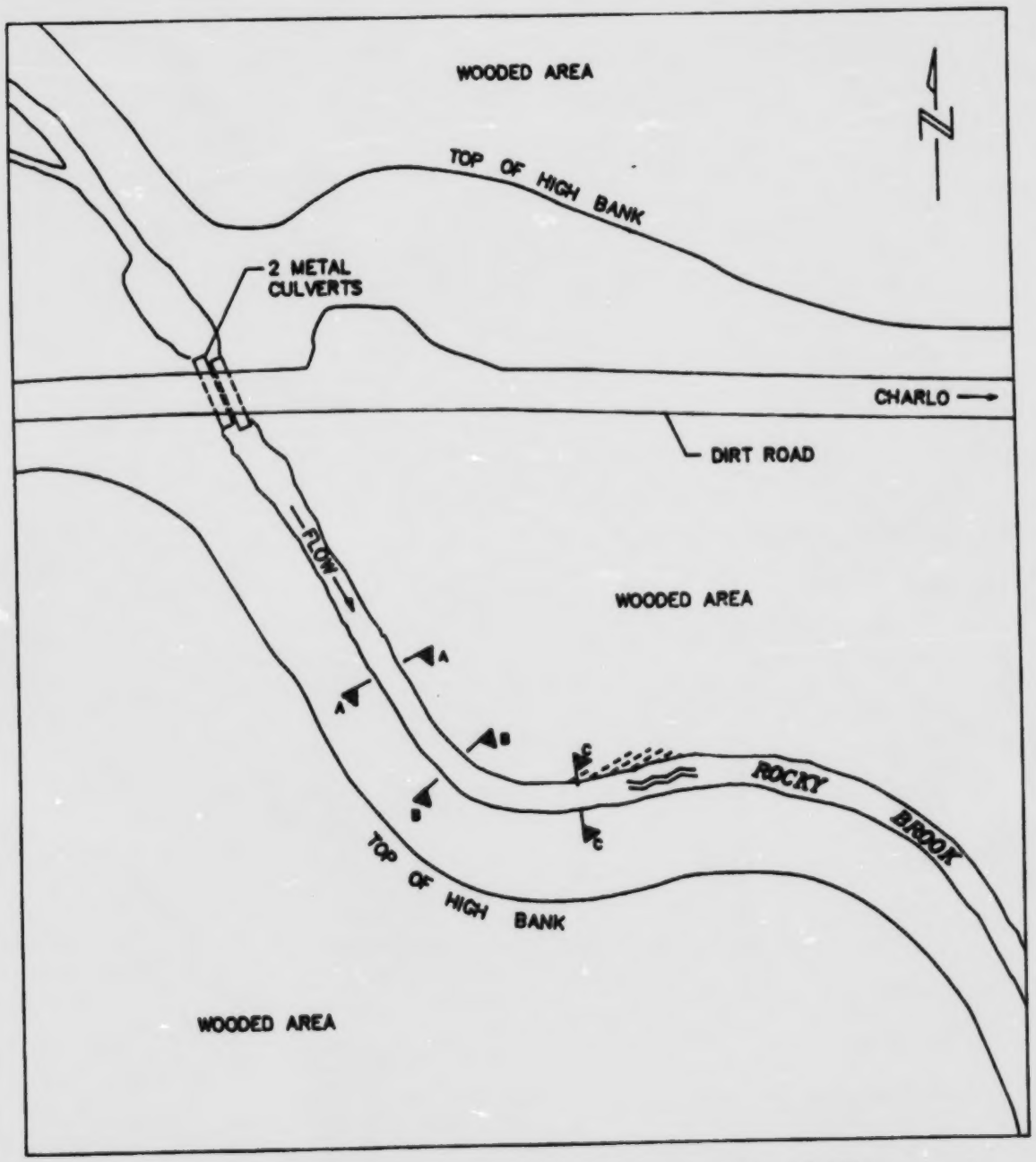
TOPOGRAPHIC MAP 21-P/13

MILITARY GRID 773 975

TABLE 1.20 General Site Observations and Remarks
SITE 5, ANTINOURI LAKE, August 12, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1000-1800 |
| Weather | overcast |
| Air temperature (°C) | 18 |
| Electroseining conditions | not seined |
| Instream cover | |
| Bottom | |
| Bottom type | |
| Features | |
| Aquatic vegetation | |
| Stream cover | |
| Banks | |
| Shoreline vegetation | mixed forest surrounding most of shoreline |
| Surrounding terrain | hilly, forested |
| Pollution sources | recreational activity |
| Resource utilization | recreational activity fishing |
| Order stream | |
| Photographic record | FHD-84-8-NB-60 to 66 |
| General | lake sampled by gill netting |

FIG. 1.10 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 6, ROCKY BROOK, AUGUST 14,1984




LEGEND

- A A — CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 10 20 m (APPROX.)
TOPOGRAPHIC MAP 21-O/9
MILITARY GRID 986 885

TABLE 1.21 General Site Observations and Remarks
SITE 6, ROCKY BROOK, August 14, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1000 - 1400 |
| Weather | sunny, partial cloud |
| Air temperature (°C) | 28 |
| Electroseining conditions | excellent |
| Instream cover | rocks |
| Bottom | sections stable, sections unstable |
| Bottom type (visual est.,%) | boulder/cobble/gravel/ sand - 5/30/60/5 |
| Features (estimate, %) | riffle/run - 80/20 |
| Aquatic vegetation | submergent - some moss growth on rocks |
| Stream cover | dense - heavy alder canopy in places |
| Banks | stable |
| Shoreline vegetation | sparse grass, heavy alder, conifer - fir, spruce, cedar |
| Surrounding terrain | upland conifer fir, spruce, cedar |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic record | FHD-84-8-NB 67 to 85 |
| General | falls noted below site heavy use of logging road |

FIG. 1.11 STREAM CROSS-SECTIONS, SITE 6, ROCKY BROOK
AUGUST 14,1984

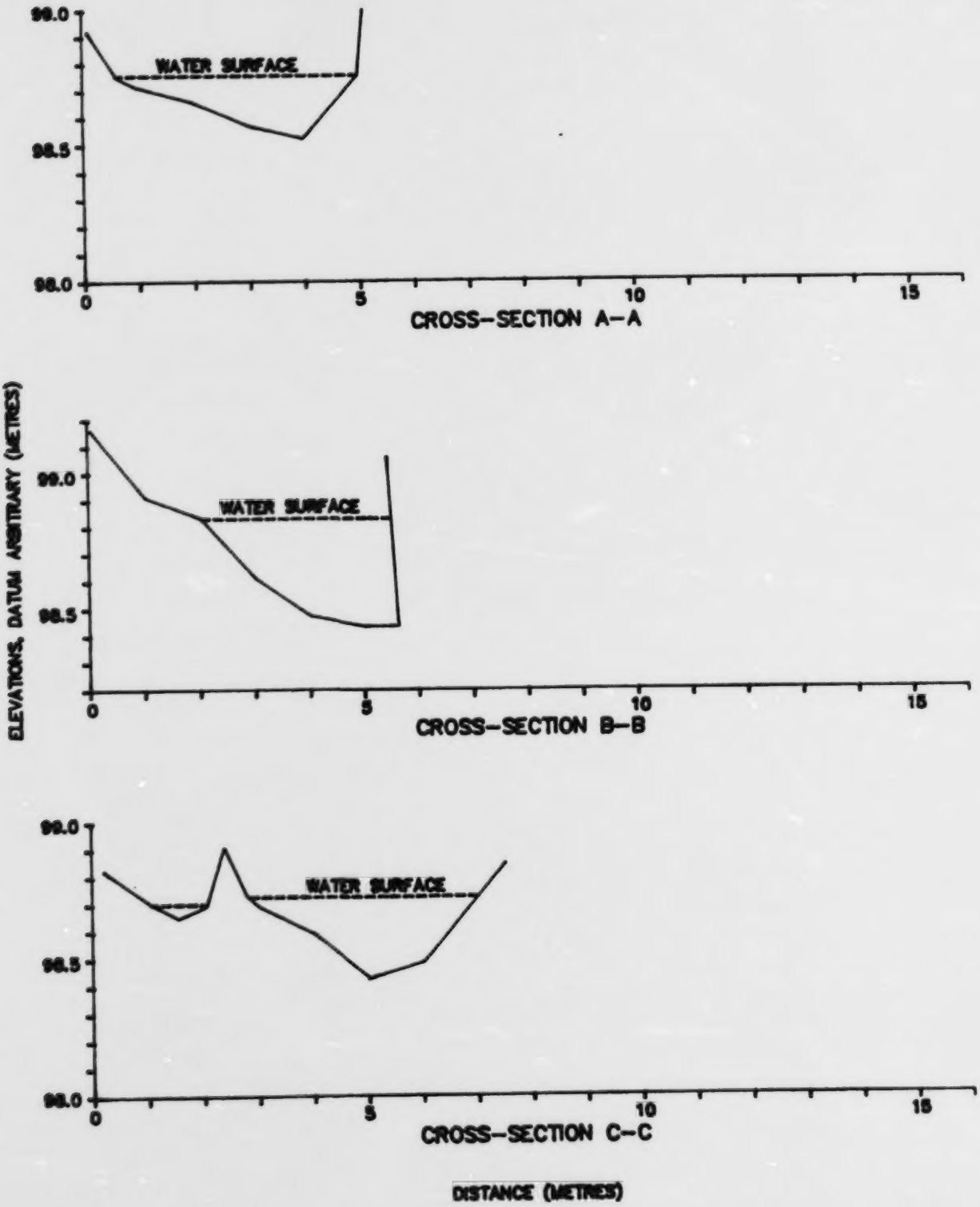


TABLE 1.22 Cross-Sectional Measurements, transect A-A
SITE 6, ROCKY BROOK, August 4, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.1 | 1.08 | 98.92 | Bank Full Assumed |
| 0.6 | 1.24 | 98.76 | Top/Edge Water |
| 1.0 | 1.28 | 98.72 | |
| 2.0 | 1.34 | 98.66 | |
| 3.0 | 1.42 | 98.58 | |
| 3.0 | 1.23 | 98.77 | Top Water |
| 4.0 | 1.48 | 98.52 | |
| 5.0 | 1.24 | 98.76 | Edge Water |
| 5.1 | 1.00 | 99.00 | Bank Full Assumed |

Slope of Site: 1.4%

Drainage Area Tributary to site: 25.5 $Km^2$

TABLE 1.23 Cross-Sectional Measurements, Transect B-B
SITE 6, ROCKY BROOK, August 14, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.85 | 99.15 | Bank Full Assumed |
| 1.0 | 1.10 | 98.90 | |
| 2.0 | 1.18 | 98.82 | Top/Edge Water |
| 3.0 | 1.40 | 98.60 | |
| 4.0 | 1.53 | 98.47 | |
| 5.0 | 1.58 | 98.42 | |
| 5.4 | 0.96 | 99.04 | Bank Full Assumed |
| 5.6 | 1.58 | 98.42 | Undercut Bank/Edge Water |

TABLE 1.24 Cross-Sectional Measurements, Transect C-C
SITE 6, ROCKY BROOK, August 14, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.2 | 1.18 | 98.82 | Bank Full Assumed |
| 1.0 | 1.29 | 98.71 | Top/Edge Water |
| 1.5 | 1.35 | 98.65 | |
| 2.0 | 1.30 | 98.70 | Top Water |
| 2.3 | 1.09 | 98.91 | |
| 2.8 | 1.27 | 98.73 | Top/Edge Water |
| 3.0 | 1.31 | 98.69 | |
| 4.0 | 1.41 | 98.59 | |
| 5.0 | 1.57 | 98.43 | |
| 6.0 | 1.51 | 98.49 | |
| 7.0 | 1.27 | 98.73 | Top/Edge Water |
| 7.5 | 1.15 | 98.85 | Bank Full Assumed |

TABLE 1.25 Water Velocity and Unit Discharge
SITE 6, ROCKY BROOK, August 14, 1984

(Flows through C.M.P., approx. 2.37m diameter)

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.00 | 0.0 | - | - |
| 0.28 | 0.20 | 18.0* | 0.180 | 0.009 |
| 0.57 | 0.32 | 36.0 | 0.360 | 0.030 |
| 0.85 | 0.36 | 57.0 | 0.570 | 0.054 |
| 1.14 | 0.32 | 40.0 | 0.400 | 0.033 |
| 1.42 | 0.20 | 20.0* | 0.200 | 0.010 |
| 1.70 | 0.00 | 0.0 | - | - |

$Q = \Sigma q = 0.14$ $m^3/S$
(2) Pygmy Wheel
* Estimated

TABLE 1.26 Mean Diameter and Ranking of Bed Load Material
SITE 6, ROCKY BROOK, August 14, 1984

| Sample No. | Axis Measurements (cm) | | | Mean Dimension | Rank |
|---|---|---|---|---|---|
| | x | y | z | $\phi$ (cm) | |
| 1 | 24 | 17 | 18 | 20 | 21 |
| 2 | 15 | 20 | 20 | 18 | 15 |
| 3 | 16 | 17 | 20 | 18 | 16 |
| 4 | 47 | 20 | 30 | 32 | 29 |
| 5 | 12 | 32 | 33 | 26 | 24 |
| 6 | 30 | 13 | 19 | 21 | 22 |
| 7 | 16 | 20 | 14 | 17 | 14 |
| 8 | 40 | 27 | 30 | 32 | 30 |
| 9 | 10 | 15 | 12 | 12 | 5 |
| 10 | 24 | 15 | 16 | 18 | 17 |
| 11 | 12 | 12 | 09 | 11 | 2 |
| 12 | 26 | 13 | 08 | 16 | 10 |
| 13 | 20 | 30 | 27 | 26 | 25 |
| 14 | 13 | 20 | 12 | 15 | 9 |
| 15 | 32 | 43 | 32 | 36 | 32 |
| 16 | 36 | 30 | 32 | 33 | 31 |
| 17 | 09 | 15 | 10 | 11 | 3 |
| 18 | 16 | 09 | 09 | 11 | 4 |
| 19 | 25 | 30 | 25 | 27 | 26 |
| 20 | 18 | 16 | 08 | 14 | 8 |
| 21 | 31 | 30 | 22 | 28 | 28 |
| 22 | 10 | 18 | 12 | 13 | 7 |
| 23 | 11 | 22 | 14 | 16 | 11 |
| 24 | 16 | 22 | 18 | 19 | 19 |
| 25 | 10 | 17 | 09 | 12 | 6 |
| 26 | 14 | 20 | 13 | 16 | 12 |
| 27 | 11 | 11 | 08 | 10 | 1 |
| 28 | 17 | 30 | 10 | 19 | 20 |
| 29 | 35 | 26 | 20 | 27 | 27 |
| 30 | 15 | 24 | 08 | 16 | 13 |
| 31 | 15 | 19 | 33 | 22 | 23 |
| 32 | 20 | 18 | 16 | 18 | 18 |

FIG. 1.12 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 7, UPPER MCNAIR BROOK, AUGUST 14,1984

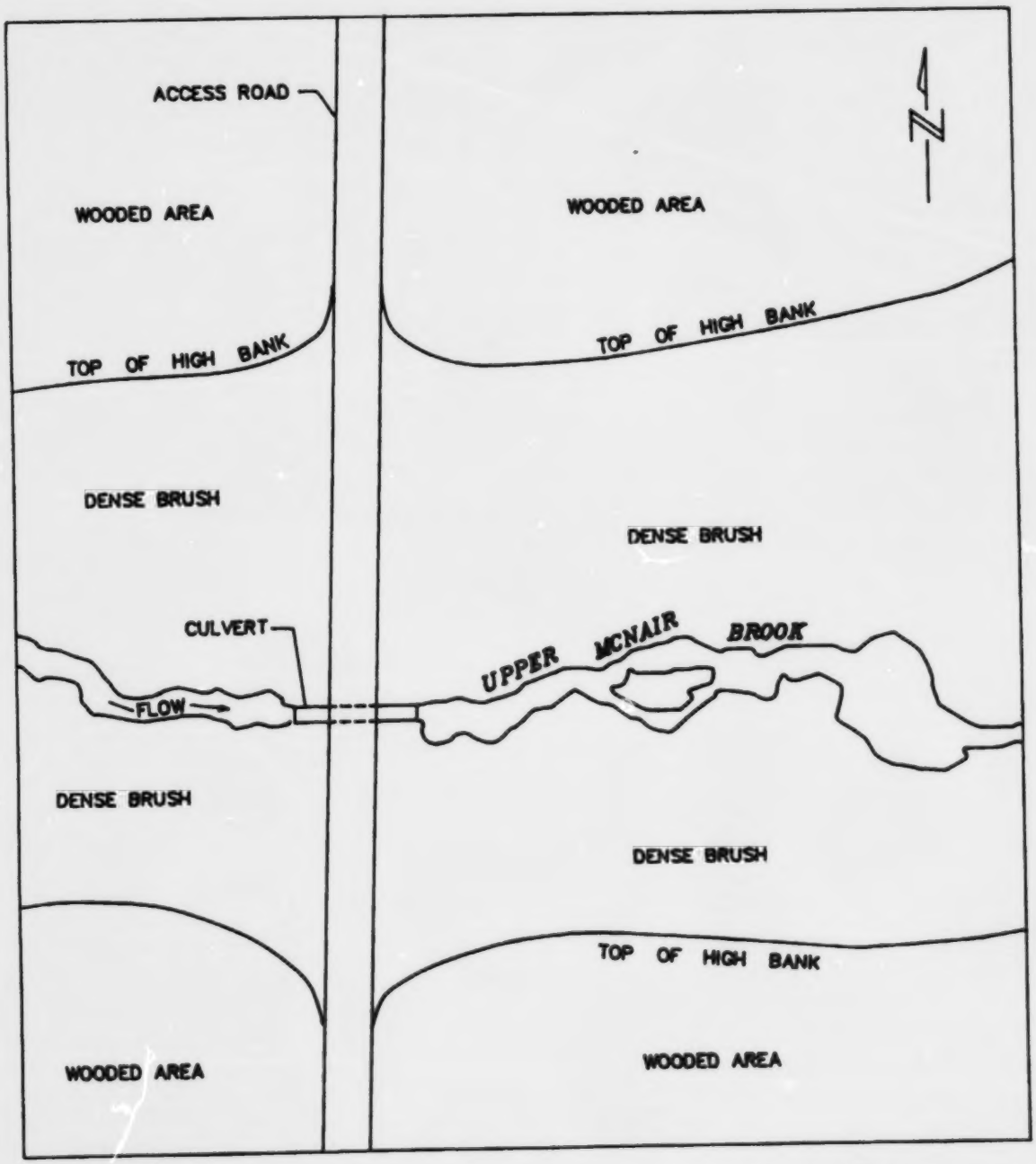


TABLE 1.27 General Site Observations and Remarks
SITE 7, UPPER MCNAIR BROOK, August 14, 1984

| Physical Characteristics | Description |
|---|---|
| Time | not noted |
| Weather | sunny, some cloud |
| Air temperature (°C) | 28 |
| Electroseining conditions | difficult - dense alder cover |
| Instream cover | not noted |
| Bottom | not noted |
| Bottom type (visual est.,%) | sand and fine gravel |
| Features (estimate,%) | riffle/pool not estimated |
| Aquatic vegetation | not noted |
| Stream cover | boulder |
| Banks | stable |
| Shoreline vegetation | alder |
| Surrounding terrain | not noted |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic record | FHD-84-8-NB-238, 239 |
| General | spot check<br>appears to be good trout habitat<br>only one salamander captured |

TABLE 1.28 Water Velocity and Unit Discharge
SITE 7, UPPER MCNAIR BROOK
August 14, 1984

(Flows through C.M.P., approx. 1.09m diameter)

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge $q(m^3/S)$ |
|---|---|---|---|---|
| 0.0 | 0.00 | - | - | - |
| 0.137 | 0.062 | 25.5* | 0.255 | 0.002 |
| 0.342 | 0.085 | 51.0 | 0.510 | 0.006 |
| 0.411 | 0.062 | 25.5* | 0.255 | 0.002 |
| 0.685 | 0.00 | - | - | - |

$Q = \Sigma q = 0.01\ m^3/S$
(2) Pygmy Wheel
* Estimated
Drainage Area Tributary to Site: 1.8 $Km^2$

FIG. 1.13 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 8, LOWER SOUTH BRANCH JACQUET RIVER, AUGUST 18,1984

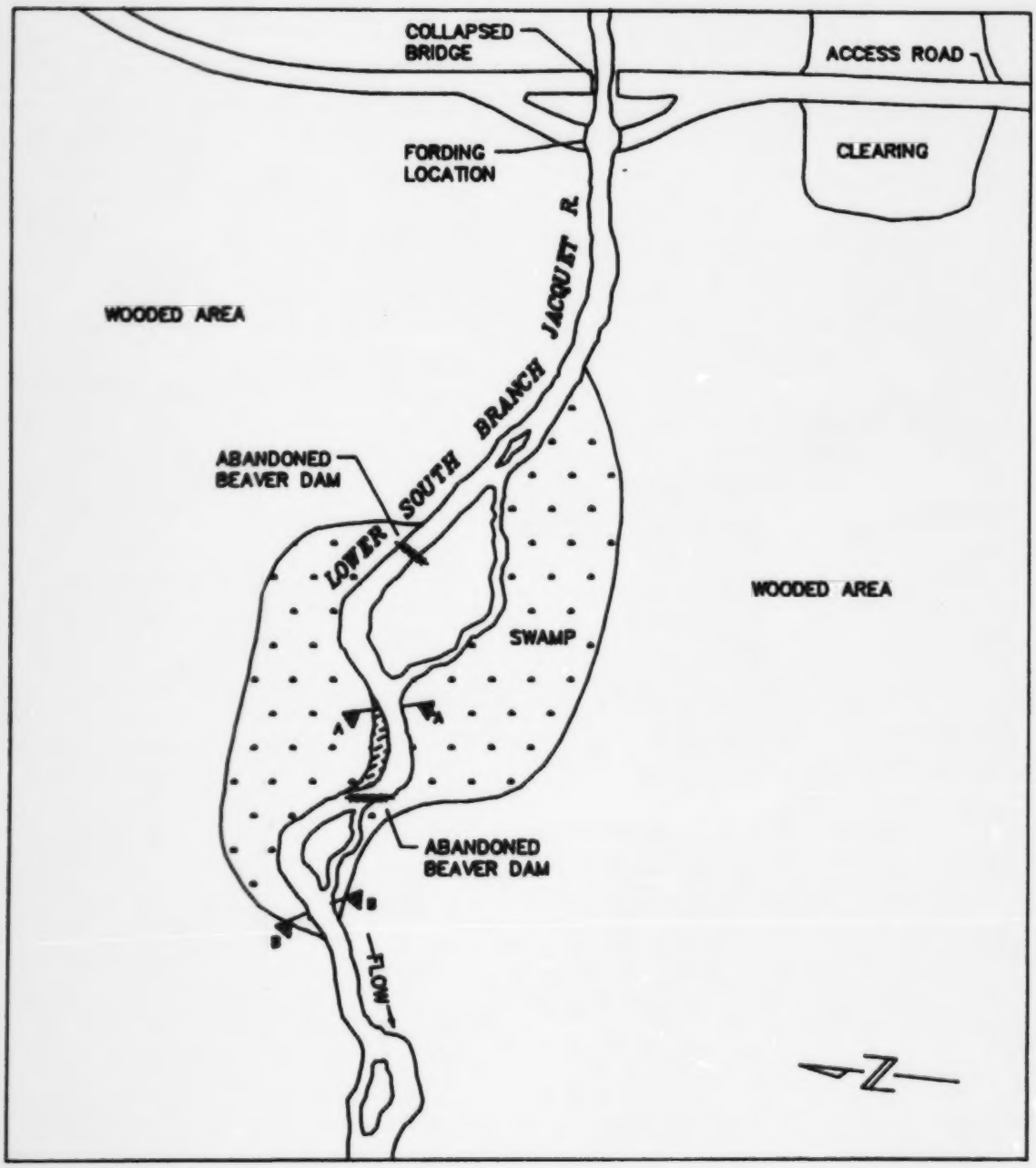


TABLE 1.29 General Site Observations and Remarks
SITE 8, LOWER SOUTH BRANCH JACQUET RIVER
August 18, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 0800 - 1800 |
| Weather | sunny, some cloud |
| Air temperature (°C) | 22 |
| Electroseining conditions | fair |
| Instream cover | undercut bank<br>scattered brush and logs |
| Bottom | stable |
| Bottom type (visual est.,%) | cobble/gravel/sand/<br>muck - 20/60/10/10 |
| Features (estimate,%) | shallow riffles, one pool noted |
| Aquatic vegetation | submergent - small dense plants |
| Stream cover | generally dense<br>partly open in impounded area |
| Banks | stable |
| Shoreline vegetation | heavy alder cover throughout |
| Surrounding terrain | upland hardwood - birch, aspen<br>upland conifer - balsam fir |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic record | FHD-84-8-NB-86 to 94 |
| General | abandoned beaver dams noted |

FIG. 1.14 STREAM CROSS-SECTIONS, SITE 8, LOWER SOUTH BRANCH JACQUET RIVER, AUGUST 18,1984

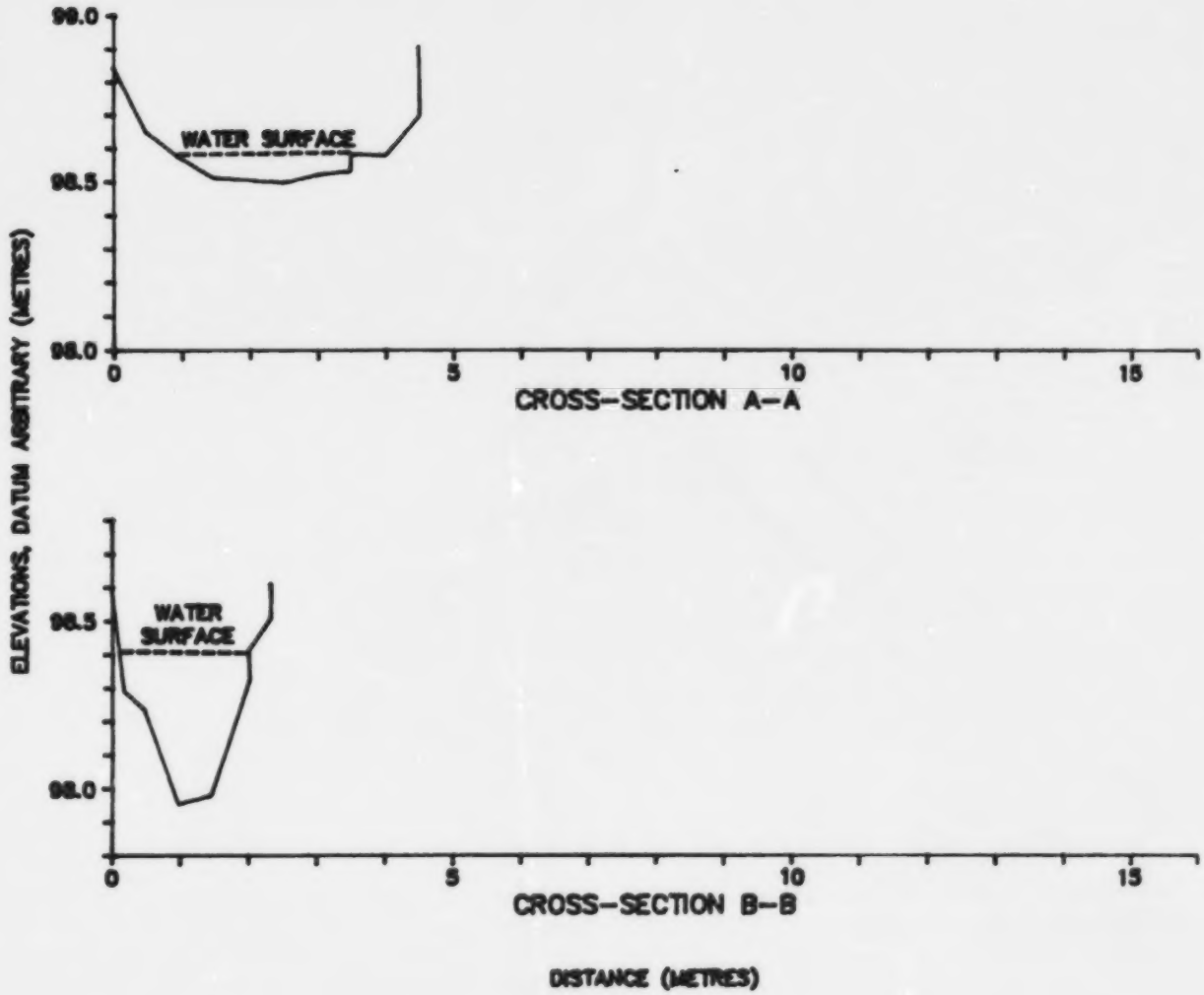


TABLE 1.30 Cross-Sectional Measurements, Transect A-A
SITE 8, LOWER SOUTH BRANCH JACQUET RIVER,
August 18, 1984
(67m Below upper electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.16 | 98.84 | Bank Full Assumed |
| 0.5 | 1.35 | 98.65 | |
| 1.0 | 1.42 | 98.58 | Top/Edge Water |
| 1.5 | 1.48 | 98.52 | |
| 2.0 | 1.49 | 98.51 | |
| 2.5 | 1.50 | 98.50 | |
| 3.0 | 1.48 | 98.52 | |
| 3.5 | 1.47 | 98.53 | Edge Water |
| 3.5 | 1.41 | 98.59 | Top Water |
| 4.0 | 1.42 | 98.58 | |
| 4.5 | 1.30 | 98.70 | |
| 4.5 | 1.09 | 98.91 | Bank Full Assumed |

Slope of Site : 0.5%

Drainage Area Tributary to Site: 5.4 $Km^2$

TABLE 1.31 Cross-Sectional Measurements, Transect B-B
SITE 8, LOWER SOUTH BRANCH JACQUET RIVER,
August 18. 1984
(7m Above Lower Electroseining Boundary)

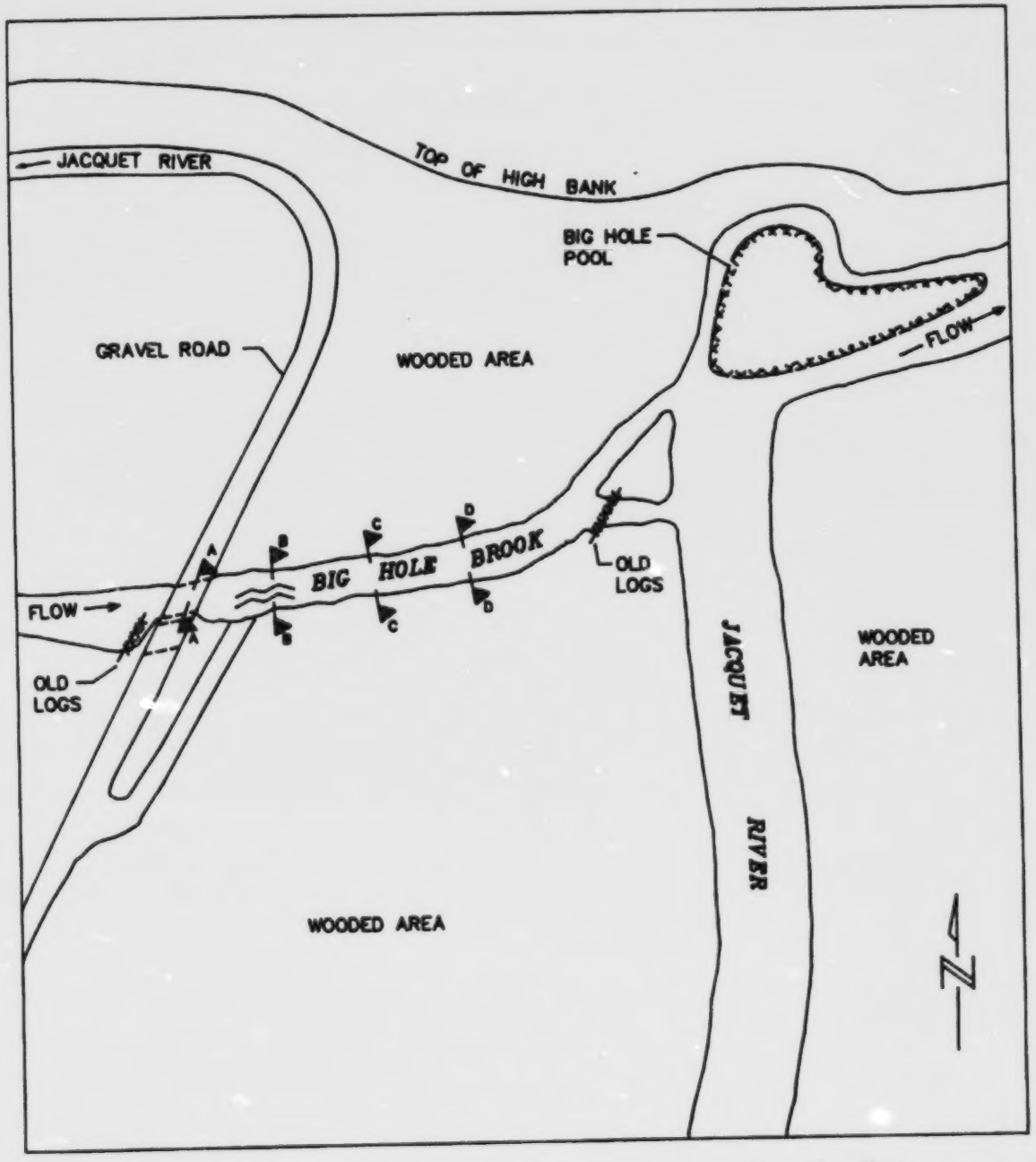
| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.41 | 98.59 | Bank Full Assumed |
| 0.1 | 1.60 | 98.40 | Top/Edge Water |
| 0.2 | 1.72 | 98.28 | |
| 0.5 | 1.77 | 98.23 | |
| 1.0 | 2.05 | 97.95 | |
| 1.5 | 2.03 | 97.97 | |
| 2.0 | 1.69 | 98.31 | |
| 2.0 | 1.60 | 98.40 | Top/Edge Water |
| 2.1 | 1.56 | 98.44 | Top Bank |
| 2.3 | 1.50 | 98.50 | |
| 2.3 | 1.40 | 98.60 | Bank Full Assumed |

TABLE 1.32 Water Velocity and Unit Discharge
SITE 8, LOWER SOUTH BRANCH JACQUET RIVER
August 18, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.125 | 20.0* | 0.20 | 0.001 |
| 0.12 | 0.135 | 39.0 | 0.39 | 0.006 |
| 0.24 | 0.140 | 32.0 | 0.32 | 0.005 |
| 0.36 | 0.115 | 33.0 | 0.33 | 0.004 |
| 0.47 | 0.100 | 16.0* | 0.16 | 0.0 |

$Q = \Sigma q = 0.02$ $m^3/S$
(2) Pygmy Wheel
* Estimated

FIG. 1.15 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 9, BIG HOLE BROOK, AUGUST 17,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 10 20 m (APPROX.)
TOPOGRAPHIC MAP 21-I/16
MILITARY GRID 187 008

TABLE 1.33 General Site Observations and Remarks
SITE 9, BIG HOLE BROOK, August 17, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1000 - 1500 |
| Weather | sunny, some cloud |
| Air temperature (°C) | 19 |
| Electroseining conditions | excellent - good visibility, flows |
| Instream cover | rocks, logs |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 20/60/20 |
| Features (estimate,%) | mostly riffle, some run noted below site |
| Aquatic vegetation | not noted |
| Stream cover | partly open |
| Banks | stable |
| Shoreline vegetation | riparian grasses, some alder |
| Surrounding terrain | upland hardwood - aspen, poplar<br>upland conifer - scattered young fir |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 3 |
| Photographic record | FHD-84-8-NB-1 to 9 |
| General | falls located approximately 0.5 km above site |

FIG. 1.16 STREAM CROSS-SECTIONS, SITE 9, BIG HOLE BROOK AUGUST 17,1984

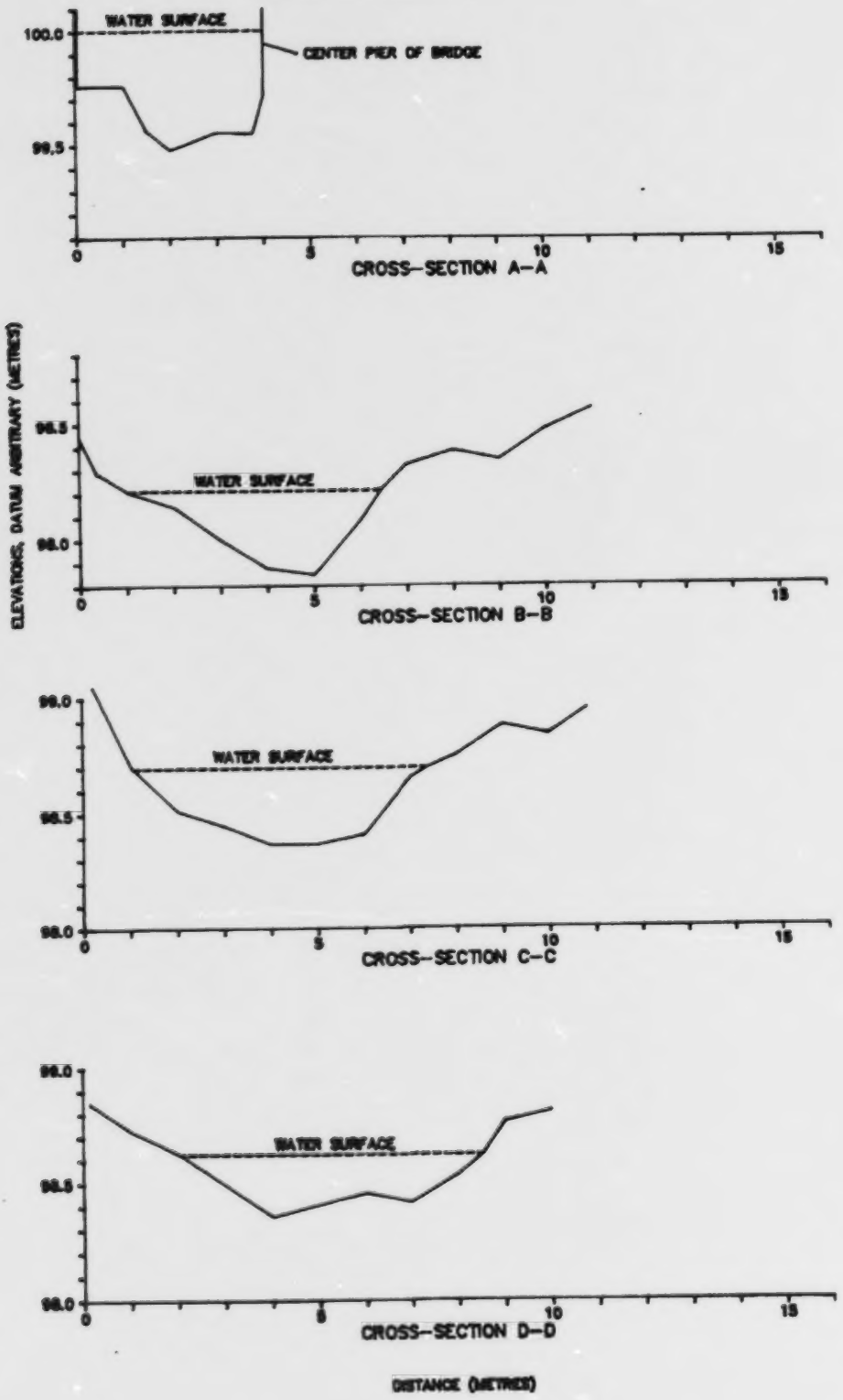


TABLE 1.34 Cross-Sectional Measurements, Transect A-A
SITE 9, BIG HOLE BROOK, August 16, 1984
True Left Span of Bridge

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.00 | 0.24 | 99.76 | Centre Pier |
| 0.25 | 0.24 | 99.76 | |
| 0.75 | 0.24 | 99.76 | |
| 1.00 | 0.28 | 99.72 | |
| 1.50 | 0.43 | 99.57 | |
| 1.75 | 0.00 | 100.00 | Top Water |
| 2.00 | 0.52 | 99.48 | |
| 2.50 | 0.48 | 99.52 | |
| 3.00 | 0.44 | 99.56 | |
| 3.50 | 0.45 | 99.55 | |
| 3.75 | 0.45 | 99.55 | |
| 4.00 | 0.28 | 99.72 | T.L.Abutment |

Slope of Site: 0.54%

Drainage Area Tributary to Site: 41.0 $Km^2$

TABLE 1.35 Cross-Sectional Measurements, Transect B-B
SITE 9, BIG HOLE BROOK, August 16, 1984
(4m Below Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.4 | 1.56 | 98.44 | Bank Full Assumed |
| 1.0 | 1.71 | 98.29 | |
| 1.7 | 1.79 | 98.21 | Top/Edge Water |
| 2.0 | 1.86 | 98.14 | |
| 3.0 | 2.00 | 98.00 | |
| 4.0 | 2.12 | 97.88 | |
| 5.0 | 2.15 | 97.85 | |
| 6.0 | 1.92 | 98.08 | |
| 6.5 | 1.78 | 98.22 | Top/Edge Water |
| 7.0 | 1.68 | 98.32 | |
| 8.0 | 1.62 | 98.38 | |
| 9.0 | 1.66 | 98.34 | |
| 10.0 | 1.53 | 98.47 | |
| 11.0 | 1.43 | 98.57 | Bank Full Assumed |

TABLE 1.36 Cross-Sectional Measurements, Transect C-C
SITE 9, BIG HOLE BROOK, August 16, 1984
(20m Below Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.2 | 0.95 | 99.05 | Bank Full Assumed |
| 1.0 | 1.29 | 98.71 | Top/Edge Water |
| 2.0 | 1.48 | 98.52 | |
| 3.0 | 1.54 | 98.46 | |
| 4.0 | 1.62 | 98.38 | |
| 5.0 | 1.62 | 98.38 | |
| 6.0 | 1.58 | 98.42 | |
| 7.0 | 1.33 | 98.67 | |
| 7.3 | 1.30 | 98.70 | Top/Edge Water |
| 8.0 | 1.24 | 98.76 | |
| 9.0 | 1.11 | 98.89 | |
| 10.0 | 1.15 | 98.85 | |
| 10.8 | 1.04 | 98.96 | Bank Full Assumed |

TABLE 1.37 Cross-Sectional Measurements, Transect D-D
SITE 9, BIG HOLE BROOK, August 16, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.1 | 1.15 | 98.85 | Bank Full Assumed |
| 1.0 | 1.27 | 98.73 | Top/Edge Water |
| 2.0 | 1.36 | 98.64 | |
| 3.0 | 1.50 | 98.50 | |
| 4.0 | 1.64 | 98.36 | |
| 5.0 | 1.59 | 98.41 | |
| 6.0 | 1.54 | 98.46 | |
| 7.0 | 1.58 | 98.42 | |
| 8.0 | 1.46 | 98.54 | |
| 8.5 | 1.38 | 98.62 | Top/Edge Water |
| 9.0 | 1.23 | 98.77 | |
| 10.1 | 1.17 | 98.83 | Bank Full Assumed |

TABLE 1.38 Water Velocity and Unit Discharge
SITE 9, BIG HOLE BROOK, August 16, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.24 | - | - | - |
| 0.25 | 0.24 | - | - | - |
| 0.75 | 0.24 | 17.0 | 0.17 | 0.015 |
| 1.00 | 0.28 | 20.0 | 0.20 | 0.021 |
| 1.50 | 0.43 | 25.0 | 0.25 | 0.054 |
| 2.00 | 0.52 | 33.0 | 0.33 | 0.085 |
| 2.50 | 0.48 | 43.0 | 0.43 | 0.103 |
| 3.0 | 0.44 | 27.0 | 0.27 | 0.059 |
| 3.50 | 0.45 | 37.0 | 0.37 | 0.062 |
| 3.75 | 0.45 | 22.0 | 0.22 | 0.025 |
| 4.00 | 0.28 | - | - | - |

$Q = \Sigma q = 0.42$ $m^3/S$
(2) Pygmy Wheel

TABLE 1.39 Mean Diameter and Ranking of Bed Load Material
SITE 9, BIG HOLE BROOK, August 16, 1984

| Sample No. | Axis Measurements (cm) | | | Mean Dimension | Rank |
|---|---|---|---|---|---|
| | x | y | z | $\phi$ (cm) | |
| 1 | 22 | 17 | 11 | 17 | 3 |
| 2 | 34 | 18 | 07 | 20 | 9 |
| 3 | 22 | 09 | 04 | 12 | 1 |
| 4 | 35 | 25 | 24 | 28 | 30 |
| 5 | 22 | 15 | 09 | 15 | 2 |
| 6 | 43 | 30 | 20 | 31 | 32 |
| 7 | 35 | 22 | 12 | 23 | 17 |
| 8 | 30 | 19 | 19 | 23 | 18 |
| 9 | 45 | 11 | 13 | 23 | 19 |
| 10 | 32 | 15 | 13 | 20 | 10 |
| 11 | 44 | 20 | 15 | 26 | 28 |
| 12 | 28 | 18 | 15 | 20 | 11 |
| 13 | 26 | 22 | 15 | 21 | 13 |
| 14 | 12 | 27 | 24 | 21 | 14 |
| 15 | 20 | 16 | 14 | 17 | 4 |
| 16 | 30 | 26 | 13 | 23 | 20 |
| 17 | 20 | 22 | 15 | 19 | 8 |
| 18 | 21 | 17 | 12 | 17 | 5 |
| 19 | 30 | 24 | 10 | 21 | 15 |
| 20 | 25 | 31 | 16 | 24 | 24 |
| 21 | 29 | 28 | 15 | 24 | 25 |
| 22 | 22 | 26 | 13 | 20 | 12 |
| 23 | 30 | 23 | 20 | 24 | 26 |
| 24 | 34 | 20 | 14 | 23 | 21 |
| 25 | 30 | 23 | 16 | 23 | 22 |
| 26 | 25 | 27 | 19 | 24 | 27 |
| 27 | 28 | 18 | 08 | 18 | 6 |
| 28 | 25 | 18 | 11 | 18 | 7 |
| 29 | 30 | 29 | 21 | 27 | 29 |
| 30 | 32 | 22 | 14 | 23 | 23 |
| 31 | 28 | 22 | 13 | 21 | 16 |
| 32 | 23 | 33 | 30 | 29 | 31 |

FIG. 1.17 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 10, TONGUE LAKE BROOK, AUGUST 19,1984

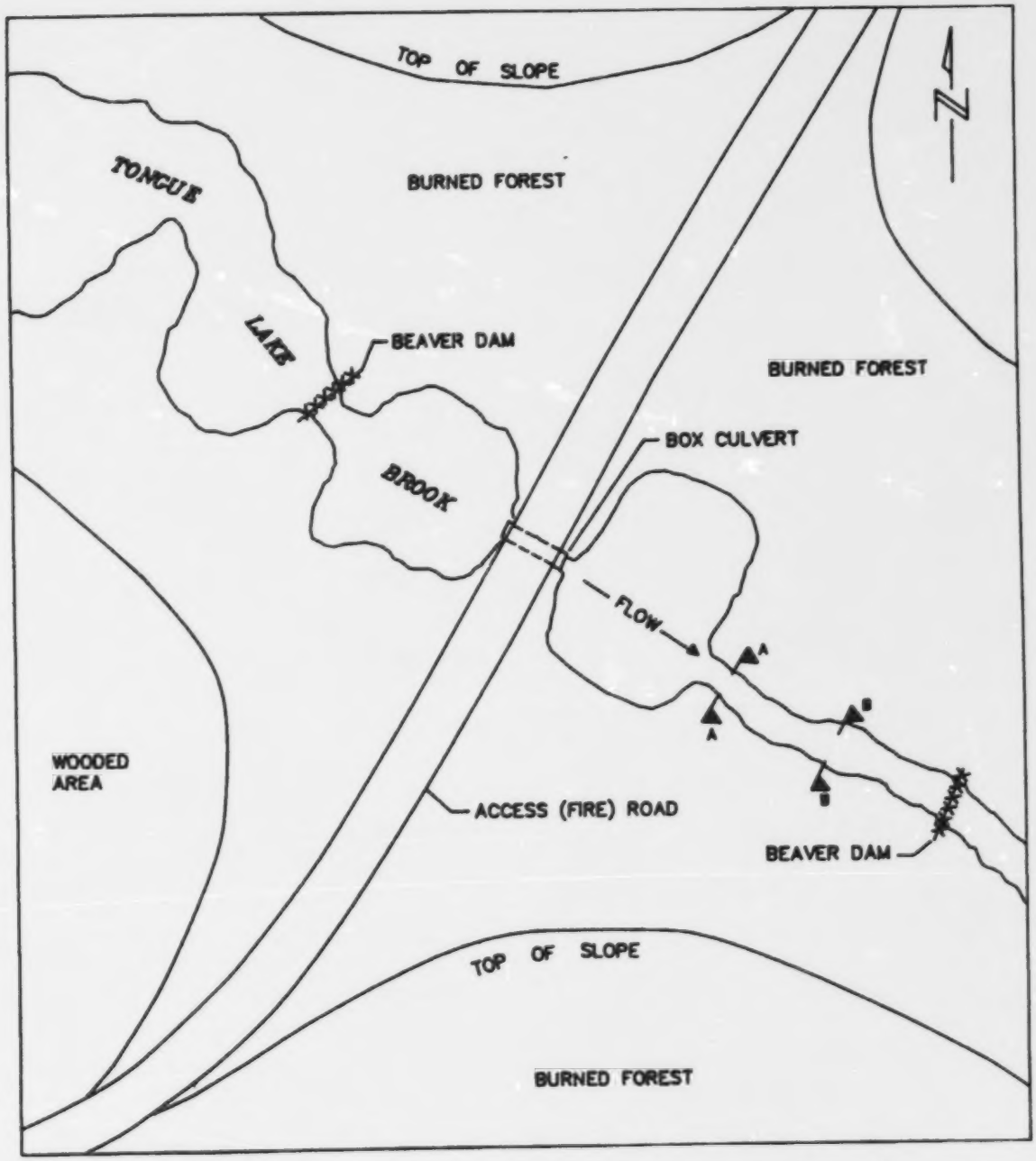


TABLE 1.40 General Site Observations and Remarks
SITE 10, TONGUE LAKE BROOK, August 19, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1130 |
| Weather | overcast, hazy, calm |
| Air temperature (°C) | 19 |
| Electroseining conditions | poor, dense alder thicket |
| Instream cover | undercut bank, scattered rocks, heavy alder, logs |
| Bottom | generally stable |
| Bottom type (visual est.,%) | boulder/gravel/sand/ silt - 5/60/5/30 |
| Features (estimate,%) | small fire pond below culvert |
| Aquatic vegetation | submergent - eel grass |
| Stream cover | dense alder in riffle and run areas, open at beaver ponds and road crossing |
| Banks | stable |
| Shoreline vegetation | riparian grasses, heavy alder |
| Surrounding terrain | upland hardwood - scattered upland conifer - burn area - fir and spruce |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 1 |
| Photographic record | FHD-84-8-NB-95 to 104 |
| General | f/w gastropods, bivalves on stream substrate, hirudinea |

FIG. 1.18 STREAM CROSS-SECTIONS, SITE 10, TONGUE LAKE BROOK AUGUST 19,1984

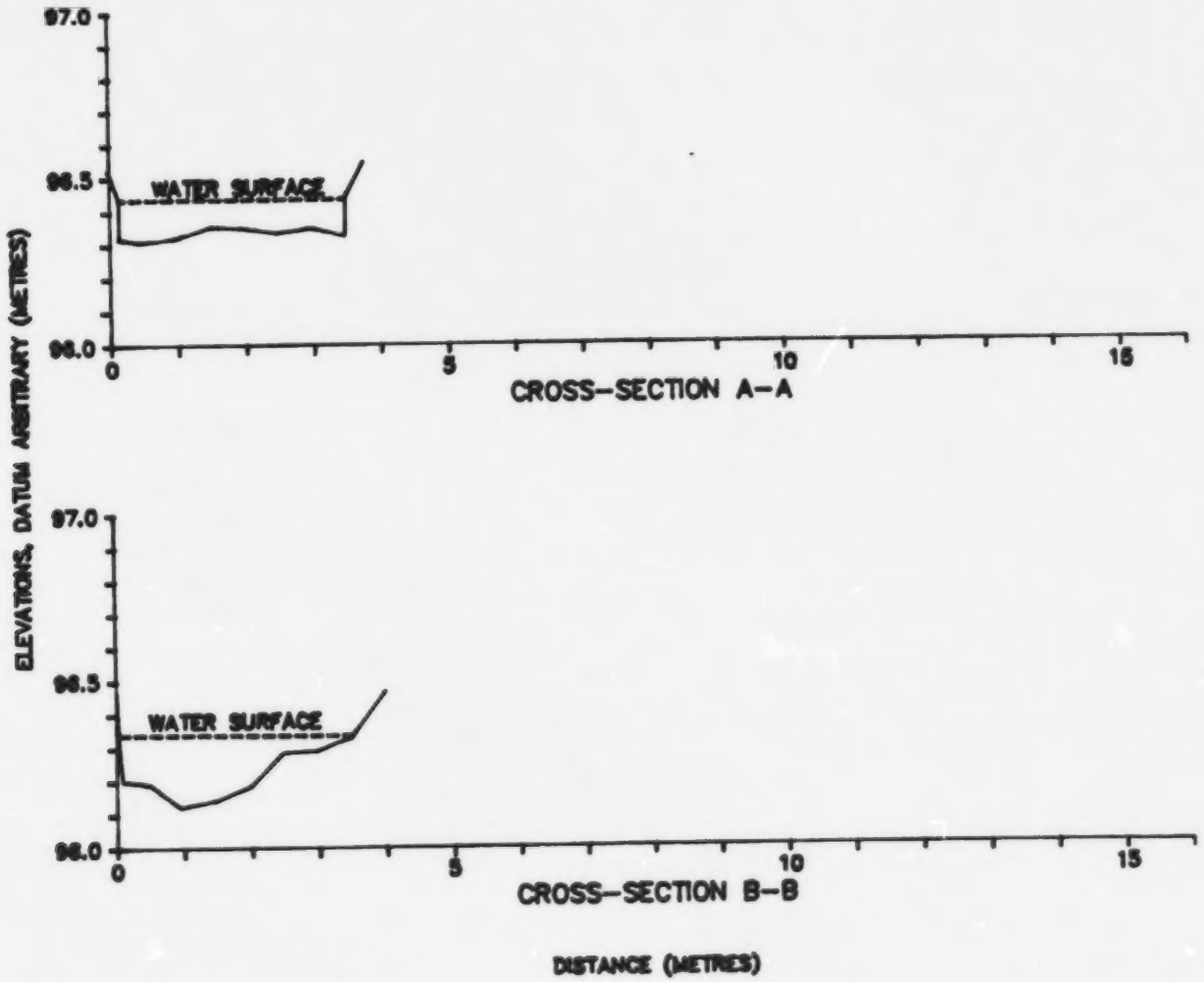


TABLE 1.41 Cross-Sectional Measurements, Transect A-A
SITE 10, TONGUE LAKE BROOK, August 19, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 3.48 | .96.52 | Bank Full Assumed |
| 0.2 | 3.57 | 96.43 | Top/Edge Water |
| 0.2 | 3.68 | 96.32 | |
| 0.5 | 3.69 | 96.31 | |
| 1.0 | 3.68 | 96.32 | |
| 1.5 | 3.65 | 96.35 | |
| 2.0 | 3.65 | 96.35 | |
| 2.5 | 3.66 | 96.34 | |
| 3.0 | 3.65 | 96.35 | |
| 3.5 | 3.68 | 96.32 | |
| 3.5 | 3.55 | 96.45 | Top/Edge Water |
| 3.8 | 3.45 | 96.55 | Bank Full Assumed |

Slope of Site: 0.75%

Drainage Area Tributary to Site: 6.2 $Km^2$

TABLE 1.42 Cross-Sectional Measurements, Transect B-B
SITE 10. TONGUE LAKE BROOK, August 19, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 3.54 | 96.46 | Bank Full Assumed |
| 0.0 | 3.65 | 96.35 | Top/Edge Water |
| 0.1 | 3.80 | 96.20 | |
| 0.5 | 3.81 | 96.19 | |
| 1.0 | 3.88 | 96.12 | |
| 1.5 | 3.86 | 96.14 | |
| 2.0 | 3.82 | 96.18 | |
| 2.5 | 3.72 | 96.28 | |
| 3.0 | 3.72 | 96.28 | |
| 3.5 | 3.68 | 96.32 | Top/Edge Water |
| 4.0 | 3.54 | 96.46 | Bank Full Assumed |

TABLE 1.43 Water Velocity and Unit Discharge
SITE 10, TONGUE LAKE BROOK
August 19, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.20 | - | - | |
| 0.28 | 0.24 | 23.0 | 0.23 | 0.016 |
| 0.57 | 0.23 | 25.0 | 0.25 | 0.017 |
| 0.86 | 0.22 | 24.0 | 0.24 | 0.015 |
| 1.14 | 0.18 | - | - | |

$Q = \Sigma q = 0.05$ $m^3/S$
(2) = Pygmy Wheel

FIG. 1.19 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 11, HEAD LAKE, AUGUST 21,1984

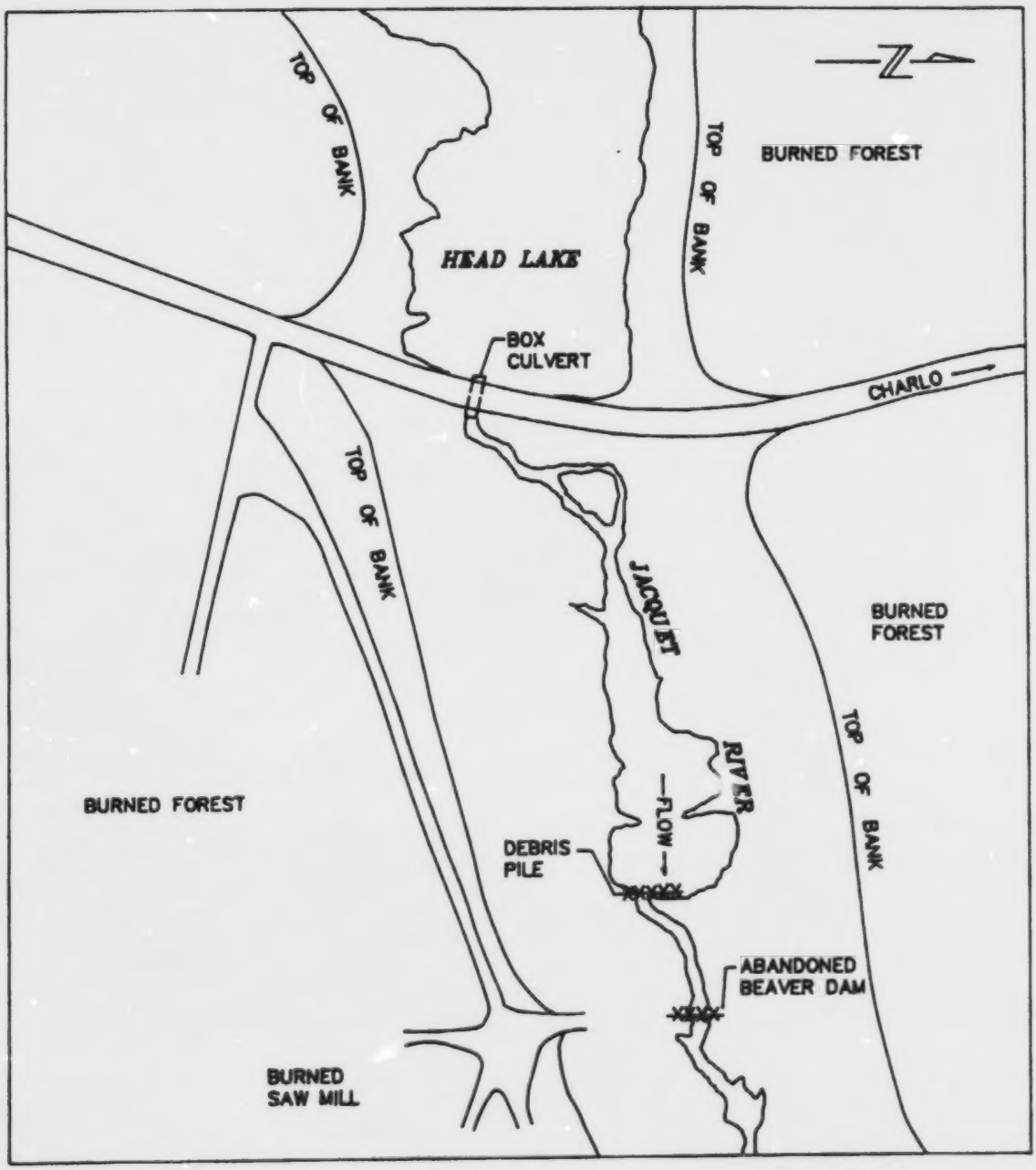


TABLE 1.44 General Site Observations and Remarks
SITE 11, HEAD LAKE, August 21, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1230 |
| Weather | sunny, some cloud |
| Air temperature (°C) | 21 |
| Electroseining conditions | difficult-heavy cover, soft bottom |
| Instream cover | undercut bank, rock, logs |
| Bottom | unstable |
| Bottom type (visual est.,%) | gravel/marl/muck/ detritus |
| Features (estimate,%) | riffle/impoundment |
| Aquatic vegetation | submergent - eel grass |
| Stream cover | dense alder cover below small flowage, partly open in beaver flowage |
| Banks | stable |
| Shoreline vegetation | alder |
| Surrounding terrain | burned forest |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 1 |
| Photographic record | FHD-84-8-NB-107 to 119 |
| General | lake sampled by gill netting heavy logging road use |

FIG. 1.20 STREAM CROSS-SECTION, SITE 11, HEAD LAKE AUGUST 21,1984

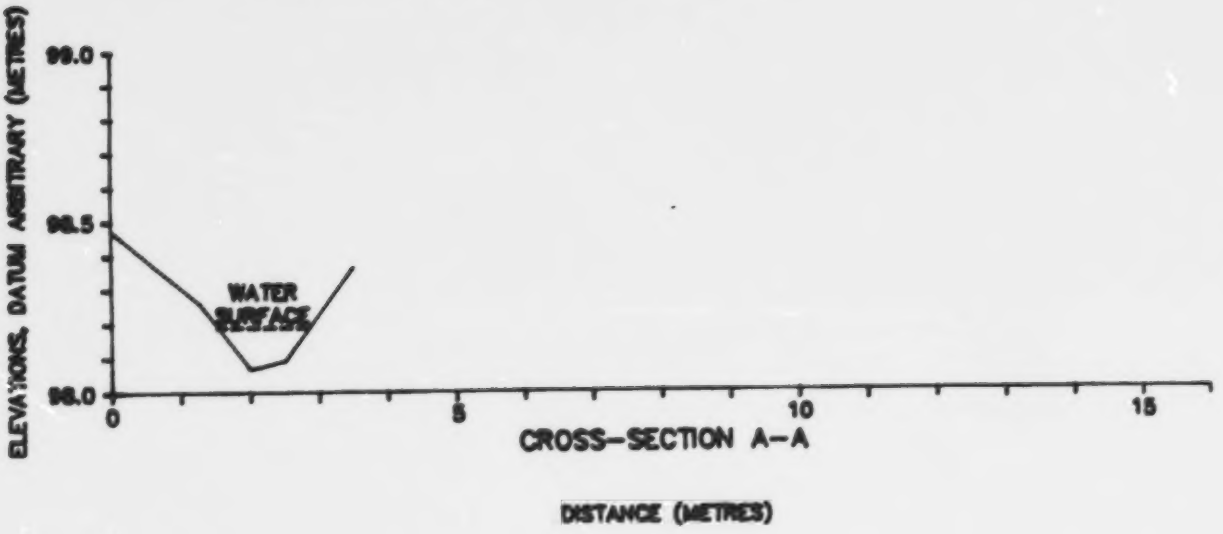


TABLE 1.45 Cross-Sectional Measurements, Transect A-A
SITE 11, HEAD LAKE, August 21, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.53 | 98.47 | Bank Full Assumed |
| 0.5 | 1.61 | 98.39 | |
| 1.0 | 1.70 | 98.30 | |
| 1.3 | 1.75 | 98.25 | Top/Edge Water |
| 1.5 | 1.80 | 98.20 | |
| 2.0 | 1.94 | 98.06 | |
| 2.5 | 1.92 | 98.08 | |
| 3.0 | 1.87 | 98.13 | Top/Edge Water |
| 3.5 | 1.64 | 98.36 | Bank Full Assumed |

Slope of Site: 0.71%

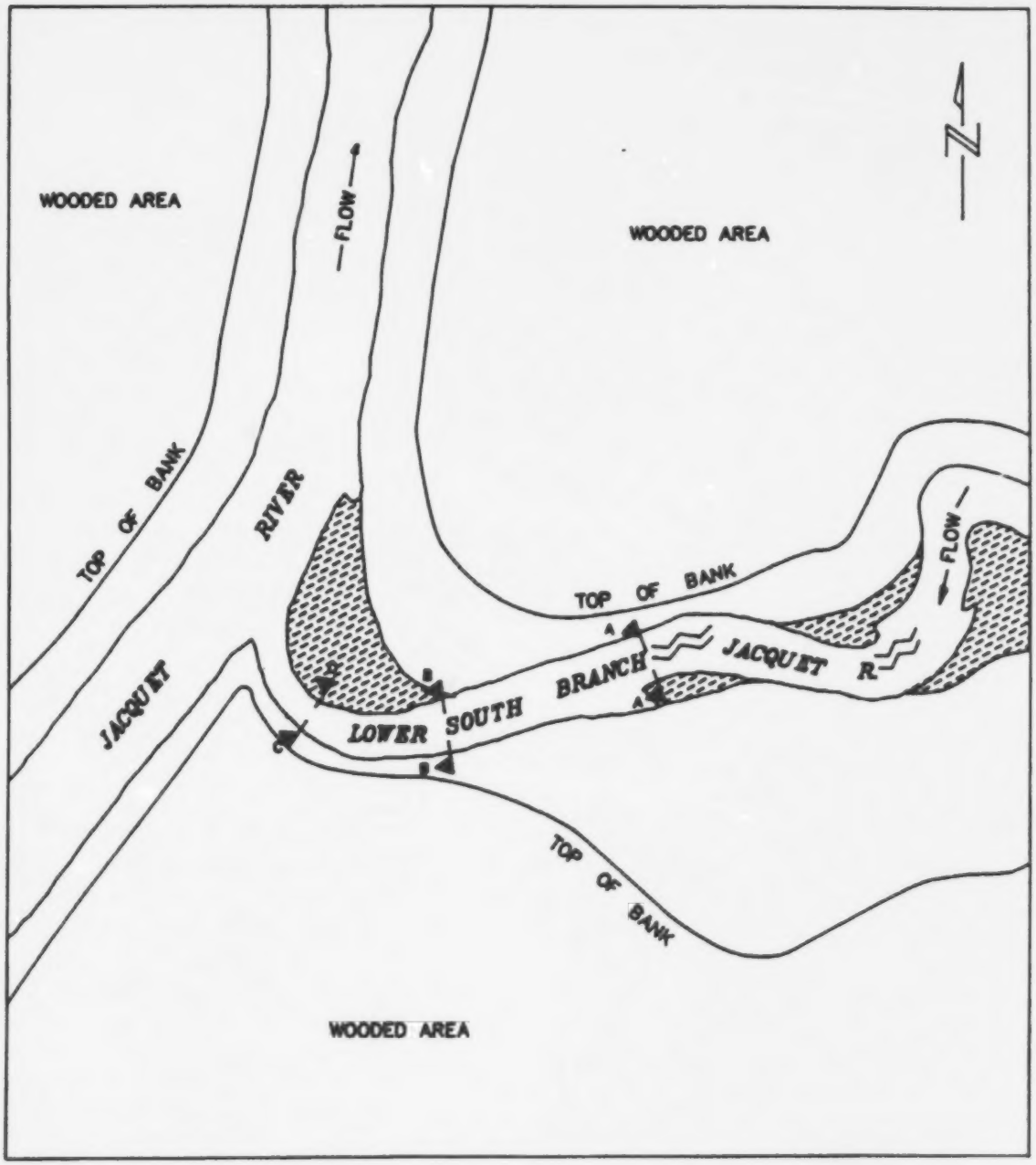
Drainage Area Tributary to Site: 1.4 $Km^2$

TABLE 1.46 Water Velocity and Unit Discharge
SITE 11, HEAD LAKE, August 21, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge $q(m^3/S)$ |
|---|---|---|---|---|
| 0.0 | 0.11 | - | - | - |
| 0.20 | 0.10 | 17.0 | 0.17 | 0.003 |
| 0.40 | 0.09 | 23.0 | 0.23 | 0.004 |
| 0.60 | 0.09 | 18.0 | 0.18 | 0.003 |
| 0.85 | 0.05 | - | - | - |

$Q = \Sigma q = 0.01\ m^3/S$
(2) Pygmy Wheel

FIG. 1.21 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 12, LOWER SOUTH BRANCH JACQUET RIVER, AUGUST 22,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 10 20 m (APPROX.)
TOPOGRAPHIC MAP 21-O/16
MILITARY GRID 179 989

: Observations and Remarks
:QUET RIVER, August 30, 1984

| s | Description |
|---|---|
| | 1030 |
| | warm, sunny |
| | not noted |
| ns | n.a. |
| | n.a. |
| | stable |
| .., %) | not noted |
| | estuary |
| | not noted |
| | not noted |
| | stable |
| | grasses |
| | estuarian |
| | some habitation, farming activity |
| | unknown |
| | 5 |
| | FHD-84-8-NB-244 and 245 |
| | mouth of estuary being dredged during study, water samples collected at bridge and upstream near head of estuary |

Remarks
.CQUET RIVER

| | scription |
|---|---|
| | |
| | |
| | |
| | |
| | ıks, rocks, logs |
| | |
| | ɔle/gravel/ '60/5 |
| | - 80/20 |
| | |
| | |
| | |
| | sses, young hardwood |
| | ood - aspen, poplar er - spruce |
| | ied |
| | |
| | |
| | 120 to 133 |

FIG. 1.22 STREAM CROSS-SECTIONS, SITE 12, LOWER SOUTH BRANCH JACQUET RIVER, AUGUST 22,1984

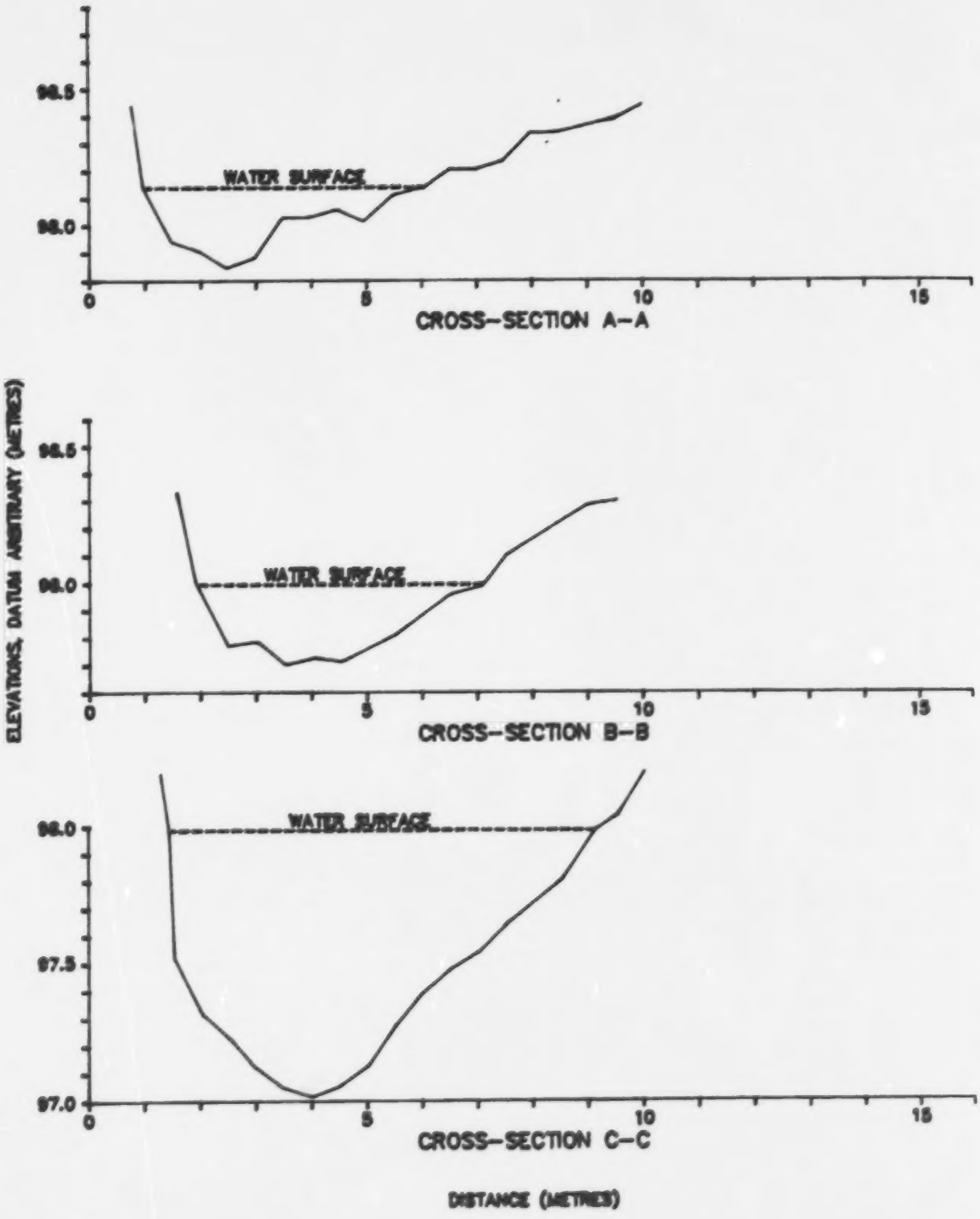


TABLE 1.48 Cross-Sectional Measurements, Transect A-A
SITE 12, LOWER SOUTH BRANCH JACQUET RIVER
August 22, 1984
(55m Above Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.8 | 1.57 | 98.43 | Bank Full Assumed |
| 1.0 | 1.86 | 98.14 | Top/Edge Water |
| 1.5 | 2.06 | 97.94 | |
| 2.0 | 2.10 | 97.90 | |
| 2.5 | 2.16 | 97.84 | |
| 3.0 | 2.12 | 97.88 | |
| 3.5 | 1.98 | 98.02 | |
| 4.0 | 1.98 | 98.02 | |
| 4.5 | 1.95 | 98.05 | |
| 5.0 | 1.99 | 98.01 | |
| 5.5 | 1.90 | 98.10 | |
| 6.1 | 1.87 | 98.13 | Top/Edge Water |
| 6.5 | 1.80 | 98.20 | |
| 7.0 | 1.80 | 98.20 | |
| 7.5 | 1.76 | 98.24 | |
| 8.0 | 1.67 | 98.33 | |
| 8.5 | 1.66 | 98.34 | |
| 9.0 | 1.64 | 98.36 | |
| 9.5 | 1.61 | 98.39 | |
| 10.0 | 1.56 | 98.44 | Bank Full Assumed |

Slope of Site: 0.64%
Drainage Area Tributary to Site: 91.7 $Km^2$

TABLE 1.49 Cross-Sectional Measurements, Transect B-B
SITE 12, LOWER SOUTH BRANCH JACQUET RIVER
August 22, 1984
(25m Above Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 1.6 | 1.69 | 98.31 | Bank Full Assumed |
| 1.9 | 2.01 | 97.99 | Top/Edge Water |
| 2.5 | 2.24 | 97.76 | |
| 3.0 | 2.30 | 97.70 | |
| 3.5 | 2.31 | 97.69 | |
| 4.0 | 2.29 | 97.71 | |
| 4.5 | 2.30 | 97.70 | |
| 5.0 | 2.24 | 97.76 | |
| 5.5 | 2.20 | 97.80 | |
| 6.0 | 2.13 | 97.87 | |
| 6.5 | 2.05 | 97.95 | |
| 7.1 | 2.02 | 97.98 | Top/Edge Water |
| 7.5 | 1.92 | 98.08 | |
| 8.0 | 1.86 | 98.14 | |
| 8.5 | 1.80 | 98.20 | |
| 9.0 | 1.73 | 98.27 | |
| 9.5 | 1.71 | 98.29 | Bank Full Assumed |

TABLE 1.50 Cross-Sectional Measurements, Transect C-C
SITE 12, LOWER SOUTH BRANCH JACQUET RIVER
August 22, 1984
(2m Above Lower Electroseining Barrier)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 1.1 | 1.57 | 98.43 | Bank Full Assumed |
| 1.4 | 2.01 | 97.99 | Top/Edge Water |
| 1.5 | 2.48 | 97.52 | |
| 2.0 | 2.68 | 97.32 | |
| 2.5 | 2.77 | 97.23 | |
| 3.0 | 2.89 | 97.11 | |
| 3.5 | 2.95 | 97.05 | |
| 4.0 | 2.98 | 97.02 | |
| 4.5 | 2.94 | 97.06 | |
| 5.0 | 2.87 | 97.13 | |
| 5.5 | 2.73 | 97.27 | |
| 6.0 | 2.61 | 97.39 | |
| 6.5 | 2.52 | 97.48 | |
| 7.0 | 2.44 | 97.54 | |
| 7.5 | 2.36 | 97.64 | |
| 8.0 | 2.28 | 97.72 | |
| 8.5 | 2.20 | 97.80 | |
| 9.1 | 2.02 | 97.98 | Top/Edge Water |
| 9.5 | 1.96 | 98.04 | |
| 10.0 | 1.80 | 98.20 | |
| 10.5 | 1.65 | 98.35 | |
| 11.0 | 1.52 | 98.48 | Bank Full Assumed |

TABLE 1.51 Water Velocity and Unit Discharge
SITE 12, LOWER SOUTH BRANCH JACQUET RIVER
August 22, 1984

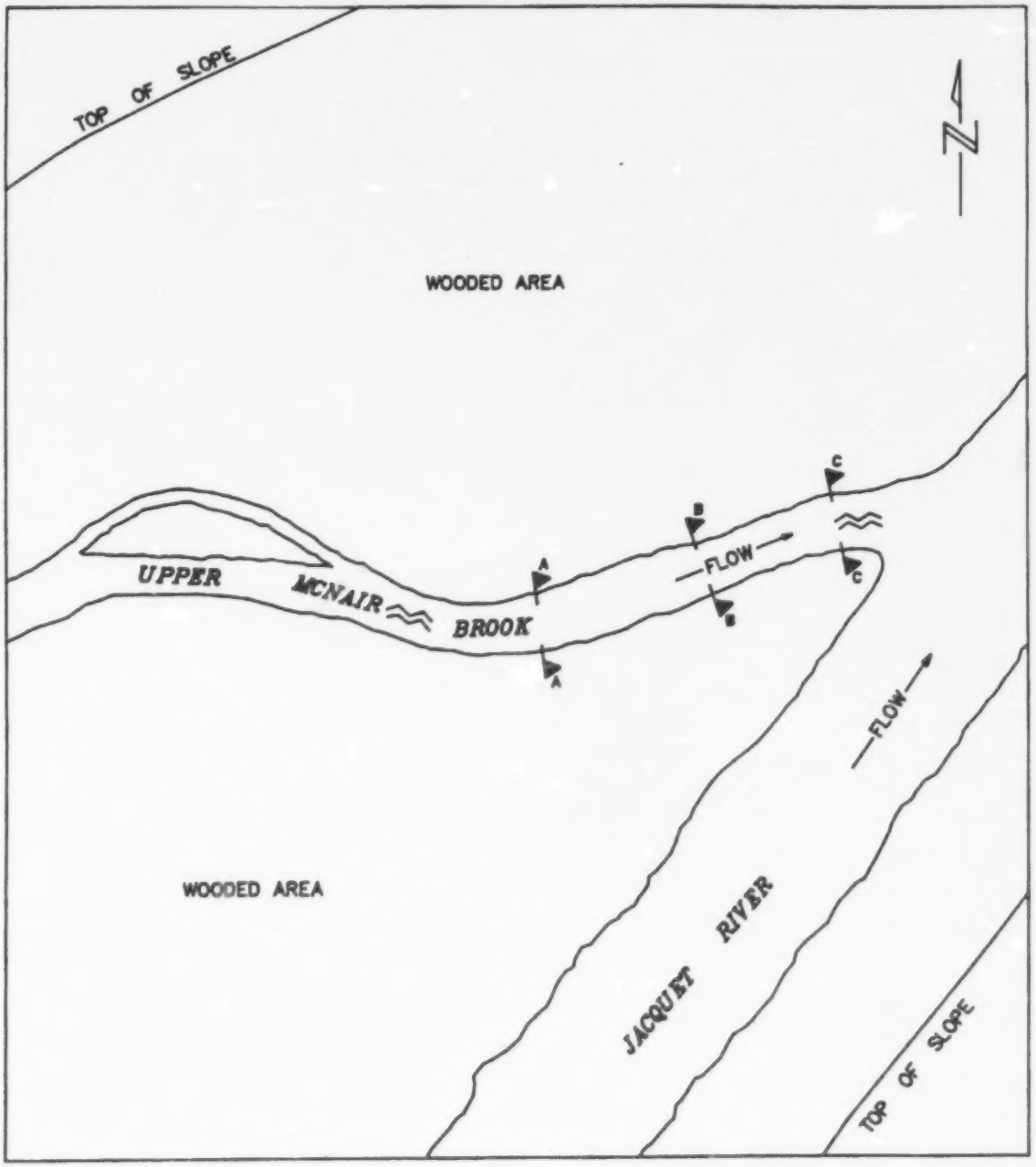
| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(1) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.00 | 0.0 | - | - |
| 0.5 | 0.15 | 0.0 | - | - |
| 1.0 | 0.26 | 12.0 | 0.272 | 0.035 |
| 1.5 | 0.31 | 16.0 | 0.360 | 0.056 |
| 2.0 | 0.31 | 16.0 | 0.360 | 0.056 |
| 2.5 | 0.28 | 14.0 | 0.316 | 0.045 |
| 3.0 | 0.28 | 12.0 | 0.272 | 0.038 |
| 3.5 | 0.31 | 14.0 | 0.316 | 0.049 |
| 4.0 | 0.39 | 15.0 | 0.338 | 0.066 |
| 4.5 | 0.36 | 12.0 | 0.272 | 0.049 |
| 5.0 | 0.34 | 15.0 | 0.338 | 0.057 |
| 5.5 | 0.29 | 14.0 | 0.316 | 0.046 |
| 6.0 | 0.26 | 12.0 | 0.272 | 0.035 |
| 6.5 | 0.20 | 7.0 | 0.161 | 0.016 |
| 7.0 | 0.11 | 5.0 | 0.117 | 0.006 |
| 7.5 | 0.07 | 0.0 | - | - |
| 8.0 | 0.06 | 0.0 | - | - |
| 8.5 | 0.00 | 0.0 | - | - |

$Q = \Sigma q = 0.55\ m^3/S$
(1) Price AA Wheel

TABLE 1.52 Mean Diameter and Ranking of Bed Load Material
SITE 12, LOWER SOUTH BRANCH JACQUET RIVER
August 22, 1984

| Sample No. | Axis Measurements (cm) x | y | z | Mean Dimension $\phi$ (cm) | Rank |
|---|---|---|---|---|---|
| 1 | 22 | 17 | 08 | 16 | 14 |
| 2 | 23 | 15 | 12 | 17 | 18 |
| 3 | 21 | 17 | 10 | 16 | 15 |
| 4 | 37 | 25 | 16 | 26 | 31 |
| 5 | 15 | 14 | 05 | 11 | 1 |
| 6 | 14 | 18 | 10 | 14 | 7 |
| 7 | 30 | 23 | 16 | 23 | 29 |
| 8 | 26 | 15 | 05 | 15 | 11 |
| 9 | 20 | 12 | 10 | 14 | 8 |
| 10 | 27 | 16 | 12 | 18 | 21 |
| 11 | 30 | 26 | 09 | 22 | 28 |
| 12 | 23 | 12 | 05 | 13 | 6 |
| 13 | 36 | 25 | 16 | 26 | 32 |
| 14 | 17 | 14 | 10 | 14 | 9 |
| 15 | 24 | 16 | 05 | 15 | 12 |
| 16 | 34 | 22 | 17 | 24 | 30 |
| 17 | 28 | 23 | 10 | 20 | 26 |
| 18 | 23 | 18 | 09 | 17 | 19 |
| 19 | 16 | 11 | 07 | 11 | 2 |
| 20 | 18 | 14 | 11 | 14 | 10 |
| 21 | 25 | 24 | 12 | 20 | 27 |
| 22 | 21 | 17 | 08 | 15 | 13 |
| 23 | 15 | 13 | 06 | 11 | 3 |
| 24 | 22 | 17 | 10 | 16 | 16 |
| 25 | 23 | 16 | 09 | 16 | 17 |
| 26 | 18 | 25 | 09 | 17 | 20 |
| 27 | 32 | 30 | 23 | 28 | 33 |
| 28 | 25 | 25 | 08 | 19 | 25 |
| 29 | 23 | 20 | 12 | 18 | 22 |
| 30 | 16 | 12 | 05 | 11 | 4 |
| 31 | 23 | 20 | 10 | 18 | 23 |
| 32 | 30 | 30 | 30 | 30 | 34 |
| 33 | 16 | 10 | 07 | 11 | 5 |
| 34 | 31 | 16 | 07 | 18 | 24 |

FIG. 1.23 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 13, UPPER MCNAIR BROOK, AUGUST 23,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 5 10 15 m (APPROX.)

TOPOGRAPHIC MAP 21-O/9

MILITARY GRID 079 901

TABLE 1.53 General Site Observations and Remarks
SITE 13, UPPER MCNAIR BROOK, August 23, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 0900 - 1200 |
| Weather | overcast |
| Air temperature (°C) | not noted |
| Electroseining conditions | good |
| Instream cover | rocks |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 30/30/40 |
| Features (estimate,%) | riffle/run - 90/10 |
| Aquatic vegetation | not noted |
| Stream cover | partly open |
| Banks | stable |
| Shoreline vegetation | grasses, shrubs, trees |
| Surrounding terrain | upland hardwood - aspen,balsam poplar |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 3 |
| Photographic record | FHD-84-8-NB-134 to 158 |
| General | remote access |

FIG. 1.24 STREAM CROSS-SECTIONS, SITE 13, UPPER MCNAIR BROOK AUGUST 23,1984

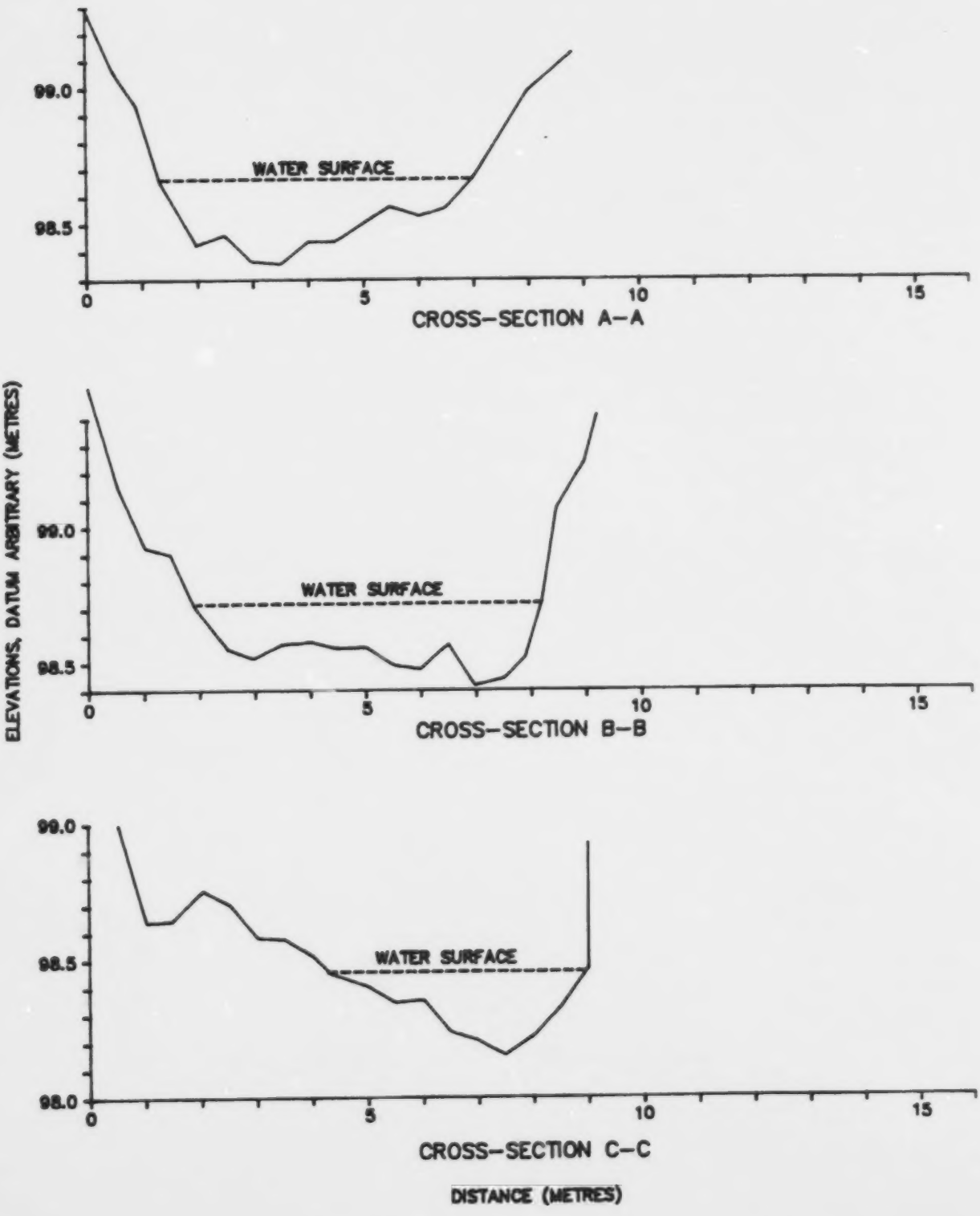


TABLE 1.54 Cross-Sectional Measurements, Transect A-A
SITE 13, UPPER MCNAIR BROOK at JACQUET RIVER
August 23, 1984
(6m Below Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.72 | 99.28 | Bank Full Assumed |
| 0.5 | 0.95 | 99.05 | |
| 0.9 | 1.07 | 98.93 | |
| 1.3 | 1.35 | 98.65 | Top/Edge Water |
| 2.0 | 1.58 | 98.42 | |
| 2.5 | 1.54 | 98.46 | |
| 3.0 | 1.64 | 98.36 | |
| 3.5 | 1.65 | 98.35 | |
| 4.0 | 1.57 | 98.43 | |
| 4.5 | 1.57 | 98.43 | |
| 5.0 | 1.51 | 98.49 | |
| 5.5 | 1.44 | 98.56 | |
| 6.0 | 1.48 | 98.52 | |
| 6.5 | 1.45 | 98.55 | |
| 7.0 | 1.34 | 98.66 | Top/Edge Water |
| 7.5 | 1.19 | 98.81 | |
| 8.0 | 1.02 | 98.98 | |
| 8.5 | 0.93 | 99.07 | |
| 8.8 | 0.88 | 99.12 | Bank Full Assumed |

Slope of Site: 1%
Drainage Area Tributary to Site: 53.8 $Km^2$

TABLE 1.55 Cross-Sectional Measurements, Transect B-B
SITE 13, UPPER MCNAIR BROOK at JACQUET RIVER
August 23, 1984
(10m Above Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.50 | 99.50 | Bank Full Assumed |
| 0.5 | 0.86 | 99.14 | |
| 1.0 | 1.09 | 98.91 | |
| 1.5 | 1.20 | 98.80 | |
| 1.9 | 1.29 | 98.71 | Top/Edge Water |
| 2.5 | 1.46 | 98.54 | |
| 3.0 | 1.50 | 98.50 | |
| 3.5 | 1.45 | 98.55 | |
| 4.0 | 1.44 | 98.56 | |
| 4.5 | 1.46 | 98.54 | |
| 5.0 | 1.46 | 98.54 | |
| 5.5 | 1.52 | 98.48 | |
| 6.0 | 1.54 | 98.46 | |
| 6.5 | 1.55 | 98.55 | |
| 7.0 | 1.60 | 98.40 | |
| 7.5 | 1.58 | 98.42 | |
| 7.9 | 1.50 | 98.50 | |
| 8.2 | 1.30 | 98.70 | Top/Edge Water |
| 8.5 | 0.95 | 99.05 | |
| 9.0 | 0.78 | 99.22 | |
| 9.2 | 0.61 | 99.39 | Bank Full Assumed |

TABLE 1.56 Cross-Sectional Measurements, Transect C-C
SITE 13, UPPER MCNAIR BROOK at JACQUET RIVER
August 23, 1984
(4m Below Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.5 | 1.01 | 98.99 | Bank Full Assumed |
| 1.0 | 1.36 | 98.64 | |
| 1.5 | 1.36 | 98.64 | |
| 2.0 | 1.25 | 98.75 | |
| 2.5 | 1.30 | 98.70 | |
| 3.0 | 1.42 | 98.58 | |
| 3.5 | 1.43 | 98.57 | |
| 4.0 | 1.49 | 98.51 | |
| 4.3 | 1.55 | 98.45 | Top/Edge Water |
| 5.0 | 1.60 | 98.40 | |
| 5.5 | 1.66 | 98.34 | |
| 6.0 | 1.65 | 98.35 | |
| 6.5 | 1.76 | 98.24 | |
| 7.0 | 1.80 | 98.20 | |
| 7.5 | 1.85 | 98.15 | |
| 8.0 | 1.78 | 98.22 | |
| 8.5 | 1.67 | 98.33 | |
| 9.0 | 1.53 | 98.47 | Top/Edge Water |
| 9.0 | 1.08 | 98.92 | Bank Full Assumed |

TABLE 1.57 Water Velocity and Unit Discharge
SITE 13, UPPER MCNAIR BROOK at JACQUET RIVER
August 23, 1984

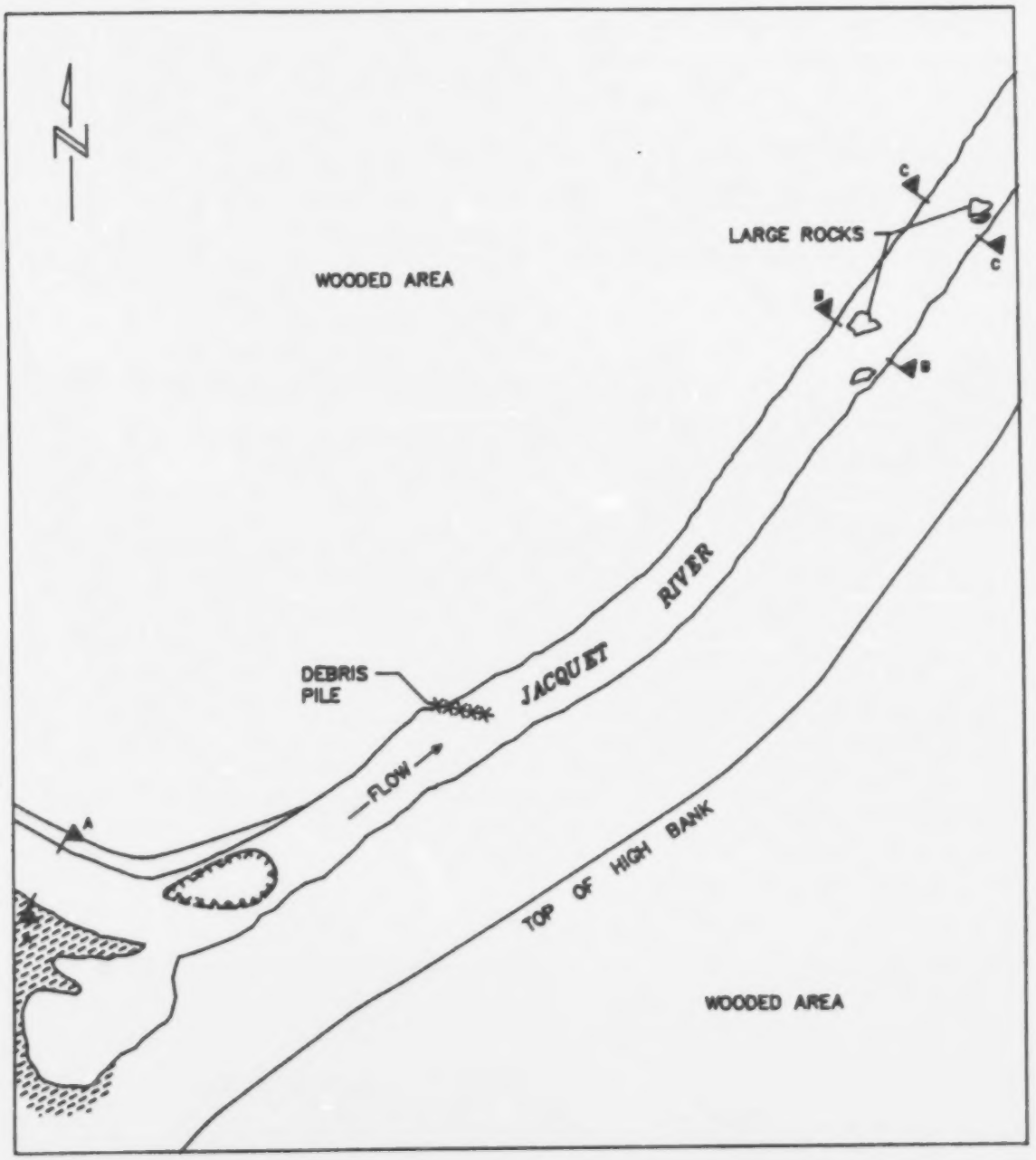
| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.00 | 0.20 | - | - | |
| 0.20 | 0.30 | 32* | 0.320 | 0.29 |
| 0.60 | 0.33 | 65 | 0.650 | 0.75 |
| 0.90 | 0.33 | 50 | 0.500 | 0.49 |
| 1.20 | 0.30 | 70 | 0.700 | 0.63 |
| 1.50 | 0.30 | 35* | 0.350 | 0.31 |
| 1.80 | 0.20 | - | - | |

$Q = \Sigma q = 0.25\ m^3/S$
(2) Pygmy Wheel
* Estimated

TABLE 1.58 Mean Diameter and Ranking of Bed Load Material
SITE 13, UPPER MCNAIR BROOK AT JACQUET RIVER
August 23, 1984

| Sample No. | Axis Measurements (cm) | | | Mean Dimension | Rank |
|---|---|---|---|---|---|
| | x | y | z | $\phi$ (cm) | |
| 1 | 45 | 20 | 14 | 26 | 29 |
| 2 | 18 | 16 | 10 | 15 | 7 |
| 3 | 20 | 28 | 14 | 21 | 22 |
| 4 | 18 | 13 | 09 | 13 | 3 |
| 5 | 28 | 13 | 11 | 17 | 11 |
| 6 | 30 | 20 | 13 | 21 | 23 |
| 7 | 29 | 19 | 11 | 20 | 20 |
| 8 | 20 | 22 | 10 | 17 | 12 |
| 9 | 25 | 18 | 06 | 16 | 9 |
| 10 | 16 | 20 | 16 | 17 | 13 |
| 11 | 37 | 27 | 17 | 27 | 31 |
| 12 | 26 | 18 | 08 | 17 | 14 |
| 13 | 24 | 13 | 05 | 14 | 6 |
| 14 | 24 | 30 | 20 | 25 | 27 |
| 15 | 24 | 32 | 12 | 23 | 25 |
| 16 | 20 | 16 | 09 | 15 | 8 |
| 17 | 20 | 27 | 06 | 18 | 17 |
| 18 | 18 | 27 | 05 | 17 | 15 |
| 19 | 35 | 24 | 22 | 20 | 21 |
| 20 | 44 | 12 | 10 | 22 | 24 |
| 21 | 30 | 45 | 20 | 32 | 33 |
| 22 | 30 | 23 | 15 | 23 | 26 |
| 23 | 39 | 15 | 20 | 25 | 28 |
| 24 | 13 | 22 | 12 | 16 | 10 |
| 25 | 34 | 18 | 16 | 12 | 1 |
| 26 | 39 | 28 | 19 | 29 | 32 |
| 27 | 39 | 18 | 20 | 26 | 30 |
| 28 | 25 | 17 | 12 | 18 | 18 |
| 29 | 30 | 16 | 10 | 19 | 19 |
| 30 | 17 | 14 | 08 | 13 | 4 |
| 31 | 22 | 11 | 04 | 12 | 2 |
| 32 | 15 | 16 | 07 | 13 | 5 |
| 33 | 25 | 15 | 12 | 17 | 16 |

FIG. 1.25 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 14, JACQUET RIVER, AUGUST 23,1984




LEGEND

- A ▲ — ▲ A CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 10 20 m (APPROX.)

TOPOGRAPHIC MAP 21-O/9

MILITARY GRID 079 900

TABLE 1.59 General Site Observations and Remarks
SITE 14, JACQUET RIVER, August 23, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1300 -1600 |
| Weather | overcast, light rain |
| Air temperature (°C) | not noted |
| Electroseining conditions | good |
| Instream cover | some large rock, bedrock covered by vegetation |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel/ sand - 20/30/40/10 |
| Features (estimate,%) | riffle/run - 80/20 |
| Aquatic vegetation | present |
| Stream cover | open, some shading along banks |
| Banks | stable |
| Shoreline vegetation | sparse grass, shrubs and trees |
| Surrounding terrain | upland hardwood<br>upland conifer - fir, spruce, cedar |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 4 |
| Photographic record | FHD-84-8-NB-141 to 158 |
| General | stream size anomaly noted |

FIG. 1.26 STREAM CROSS-SECTIONS, SITE 14, JACQUET RIVER AUGUST 23,1984

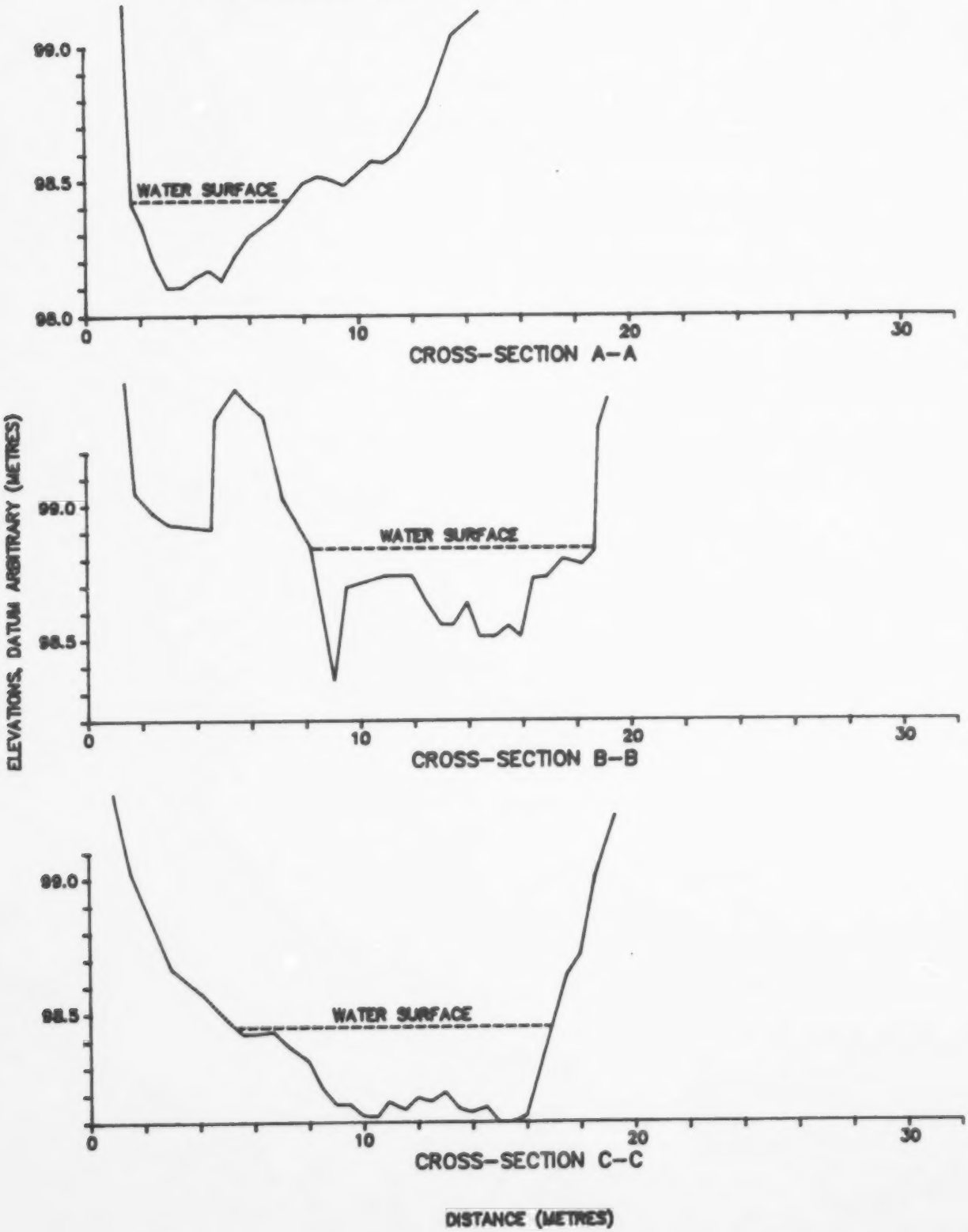


TABLE 1.60 Cross-Sectional Measurements, Transect A-A
SITE 14, JACQUET RIVER, August 23, 1984
(300m Above Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 1.4 | 0.85 | 99.15 | Bank Full Assumed |
| 1.7 | 1.58 | 98.42 | Top/Edge Water |
| 2.0 | 1.66 | 98.34 | |
| 2.5 | 1.80 | 98.20 | |
| 3.0 | 1.90 | 98.10 | |
| 3.5 | 1.90 | 98.10 | |
| 4.0 | 1.86 | 98.14 | |
| 4.5 | 1.84 | 98.16 | |
| 5.0 | 1.87 | 98.13 | |
| 5.5 | 1.78 | 98.22 | |
| 6.0 | 1.71 | 98.29 | |
| 6.5 | 1.67 | 98.33 | |
| 7.0 | 1.63 | 98.37 | |
| 7.5 | 1.57 | 98.43 | Top/Edge Water |
| 8.0 | 1.51 | 98.49 | |
| 8.5 | 1.49 | 98.51 | |
| 9.0 | 1.50 | 98.50 | |
| 9.5 | 1.52 | 98.48 | |
| 10.0 | 1.48 | 98.52 | |
| 10.5 | 1.43 | 98.57 | |
| 11.0 | 1.43 | 98.57 | |
| 11.5 | 1.39 | 98.61 | |
| 12.5 | 1.24 | 98.76 | |
| 13.5 | 0.96 | 99.04 | |
| 14.5 | 0.87 | 99.13 | Bank Full Assumed |

Slope of Site: 0.8%
Drainage Area Tributary to Site: 93.7 $Km^2$

TABLE 1.61 Cross-Sectional Measurements, Transect B-B
SITE 14, JACQUET RIVER, August 23, 1984
(1m Below Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 1.4 | 0.55 | 99.45 | Bank Full Assumed |
| 1.9 | 0.96 | 99.04 | |
| 2.5 | 1.04 | 98.96 | |
| 3.0 | 1.07 | 98.93 | |
| 4.6 | 1.10 | 98.90 | |
| 4.8 | 0.68 | 99.32 | Top of Bank |
| 5.5 | 0.58 | 99.42 | |
| 6.0 | 0.63 | 99.37 | |
| 6.5 | 0.68 | 99.32 | |
| 7.2 | 0.98 | 99.02 | |
| 8.2 | 1.16 | 98.84 | Top/Edge Water |
| 9.0 | 1.27 | 98.33 | |
| 9.5 | 1.31 | 98.69 | |
| 10.0 | 1.30 | 98.70 | |
| 10.5 | 1.29 | 98.71 | |
| 11.0 | 1.27 | 98.73 | |
| 11.5 | 1.27 | 98.73 | |
| 12.0 | 1.27 | 98.73 | |
| 12.5 | 1.37 | 98.63 | |
| 13.0 | 1.45 | 98.55 | |
| 13.5 | 1.46 | 98.54 | |
| 14.0 | 1.37 | 98.63 | |
| 14.5 | 1.50 | 98.50 | |
| 15.0 | 1.50 | 98.50 | |
| 15.5 | 1.46 | 98.54 | |
| 16.0 | 1.50 | 98.50 | |
| 16.5 | 1.28 | 98.72 | |
| 17.0 | 1.28 | 98.72 | |
| 17.5 | 1.21 | 98.79 | |
| 18.2 | 1.24 | 98.76 | |
| 18.7 | 1.18 | 98.82 | Top/Edge Water |
| 18.9 | 0.72 | 99.28 | |
| 19.2 | 0.61 | 99.39 | Bank Full Assumed |

TABLE 1.62 Cross-Sectional Measurements, Transect C-C
SITE 14, JACQUET RIVER, August 23, 1984
(25m Below Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.9 | 0.68 | 99.32 | Bank Full Assumed |
| 1.5 | 0.98 | 99.02 | |
| 3.0 | 1.33 | 98.67 | |
| 4.0 | 1.42 | 98.58 | |
| 5.0 | 1.51 | 98.49 | |
| 5.6 | 1.57 | 98.43 | Top/Edge Water |
| 6.1 | 1.57 | 98.43 | |
| 6.7 | 1.56 | 98.44 | |
| 7.2 | 1.61 | 98.39 | |
| 8.0 | 1.68 | 98.32 | |
| 8.5 | 1.77 | 98.23 | |
| 9.0 | 1.83 | 98.17 | |
| 9.5 | 1.83 | 98.17 | |
| 10.0 | 1.87 | 98.13 | |
| 10.5 | 1.87 | 98.13 | |
| 11.0 | 1.82 | 98.18 | |
| 11.5 | 1.85 | 98.15 | |
| 12.0 | 1.81 | 98.19 | |
| 12.5 | 1.82 | 98.18 | |
| 13.0 | 1.79 | 98.21 | |
| 13.5 | 1.84 | 98.16 | |
| 14.0 | 1.86 | 98.14 | |
| 14.5 | 1.84 | 98.16 | |
| 15.0 | 1.90 | 98.10 | |
| 15.5 | 1.90 | 98.10 | |
| 16.0 | 1.80 | 98.20 | |
| 16.9 | 1.55 | 98.45 | Top/Edge Water |
| 17.5 | 1.36 | 98.64 | |
| 18.0 | 1.28 | 98.72 | |
| 18.6 | 0.99 | 99.01 | |
| 19.3 | 0.76 | 99.24 | Bank Full Assumed |

TABLE 1.63 Water Velocity and Unit Discharge
SITE 14, JACQUET RIVER, August 23, 1984

Velocity 1, Above Bend

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.00 | 0.00 | - | - | - |
| 1.00 | 0.27 | 48.0 | 0.480 | 0.129 |
| 2.00 | 0.33 | 50.0 | 0.500 | 0.165 |
| 3.00 | 0.34 | 54.0 | 0.540 | 0.161 |
| 3.75 | 0.00 | - | - | - |

$Q = \Sigma q = 0.45$ $m^3/S$
(2) Pygmy Wheel

TABLE 1.64 Water Velocity and Unit Discharge
SITE 14, JACQUET RIVER, August 23, 1984

Velocity 2, Immediately Above Confluence with Upper McNair Brook

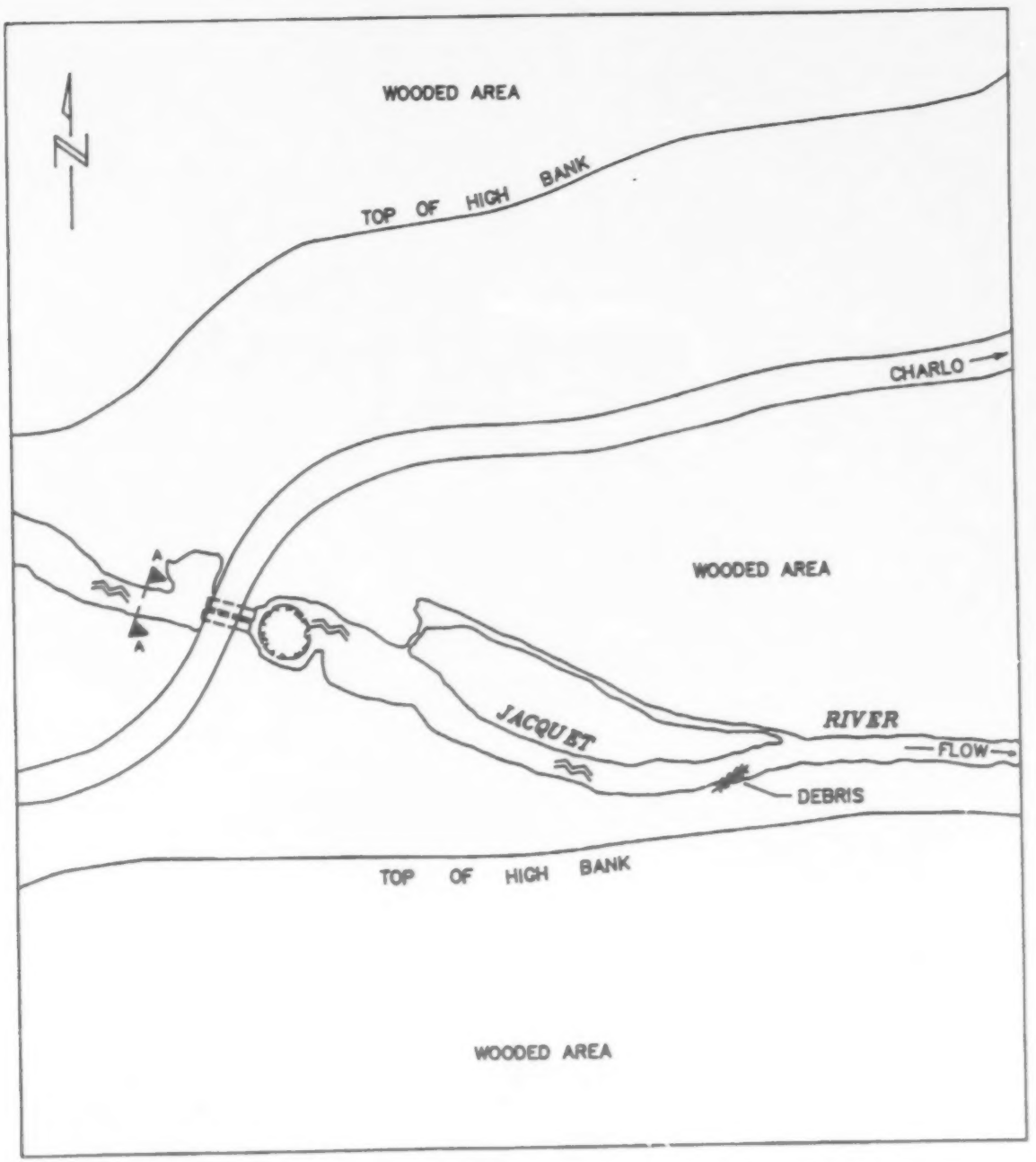
| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.00 | - | - | - |
| 5.2 | 0.10 | - | - | - |
| 6.5 | 0.30 | 18.0 | 0.180 | 0.075 |
| 8.0 | 0.30 | 22.0 | 0.220 | 0.099 |
| 9.5 | 0.28 | 19.0 | 0.190 | 0.079 |
| 11.0 | 0.40 | 25.0 | 0.250 | 0.125 |
| 12.0 | 0.50 | 27.0 | 0.270 | 0.155 |
| 13.3 | 0.40 | 15.0 | 0.150 | 0.072 |
| 14.4 | 0.30 | - | - | - |
| 15.0 | 0.00 | - | - | - |

$Q = \Sigma q = 0.60$ $m^3/S$
(2) Pygmy Wheel

TABLE 1.65 Mean Diameter and Ranking of Bed Load Material
SITE 14, JACQUET RIVER, August 23, 1984

| Sample No. | Axis Measurements (cm) | | | Mean Dimension | Rank |
|---|---|---|---|---|---|
| | x | y | z | $\phi$ (cm) | |
| 1 | 8 | 17 | 10 | 12 | 2 |
| 2 | 29 | 22 | 15 | 22 | 15 |
| 3 | 24 | 11 | 10 | 15 | 6 |
| 4 | 45 | 23 | 26 | 31 | 17 |
| 5 | 23 | 14 | 13 | 17 | 12 |
| 6 | 55 | 34 | 15 | 34 | 19 |
| 7 | 22 | 13 | 07 | 14 | 3 |
| 8 | 21 | 16 | 10 | 16 | 9 |
| 9 | 50 | 30 | 30 | 37 | 20 |
| 10 | 36 | 36 | 20 | 31 | 18 |
| 11 | 48 | 37 | 30 | 38 | 21 |
| 12 | 24 | 15 | 05 | 15 | 7 |
| 13 | 18 | 13 | 03 | 11 | 1 |
| 14 | 24 | 19 | 05 | 16 | 10 |
| 15 | 30 | 20 | 10 | 20 | 14 |
| 16 | 60 | 48 | 20 | 43 | 22 |
| 17 | 25 | 15 | 10 | 17 | 13 |
| 18 | 27 | 14 | 05 | 15 | 8 |
| 19 | 16 | 16 | 11 | 14 | 4 |
| 20 | 39 | 26 | 25 | 30 | 16 |
| 21 | 17 | 14 | 10 | 14 | 5 |
| 22 | 23 | 16 | 10 | 16 | 11 |

FIG. 1.27 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 15, JACQUET RIVER, AUGUST 25,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 10 20 m (APPROX.)
TOPOGRAPHIC MAP 21-O/9
MILITARY GRID 976 827

TABLE 1.66 General Site Observations and Remarks
SITE 15, JACQUET RIVER, August 25, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1100 - 1430 |
| Weather | clear, sunny |
| Air temperature (°C) | 24 |
| Electroseining conditions | good |
| Instream cover | heavy alder growth, logs |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel/sand/ silt - 5/20/70/3/2 |
| Features (estimate,%) | riffle/run - 80/20 |
| Aquatic vegetation | dense instream vegetation |
| Stream cover | dense alder cover - balsam fir canopy |
| Banks | stable |
| Shoreline vegetation | riparian grass, ferns, plants, heavy alder |
| Surrounding terrain | predominantly balsam fir |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 3 |
| Photographic record | FHD-84-8-NB-159-178 |
| General | logging activity |

FIG. 1.28 STREAM CROSS-SECTION, SITE 15, JACQUET RIVER AUGUST 25,1984

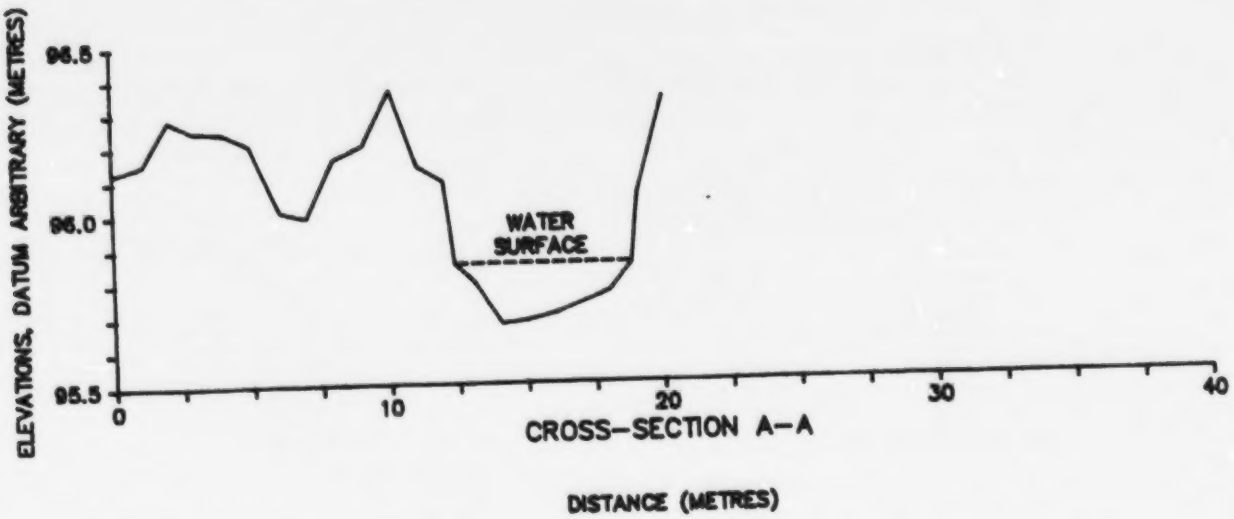


TABLE 1.67 Cross-Sectional Measurements, Transect A-A
SITE 15, JACQUET RIVER, August 25, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 3.87 | 96.13 | |
| 1.0 | 3.85 | 96.15 | |
| 2.0 | 3.72 | 96.28 | |
| 3.0 | 3.75 | 96.25 | |
| 4.0 | 3.76 | 96.24 | |
| 5.0 | 3.80 | 96.20 | |
| 6.0 | 3.99 | 96.01 | |
| 7.0 | 4.01 | 95.99 | |
| 8.0 | 3.84 | 96.16 | |
| 9.0 | 3.80 | 96.20 | |
| 10.0 | 3.63 | 96.37 | |
| 11.0 | 3.86 | 96.14 | |
| 12.0 | 3.91 | 96.09 | |
| 12.3 | 4.15 | 95.85 | Top/Edge Water |
| 13.0 | 4.20 | 95.80 | |
| 14.0 | 4.32 | 95.68 | |
| 15.0 | 4.32 | 95.68 | |
| 16.0 | 4.30 | 95.70 | |
| 17.0 | 4.27 | 95.73 | |
| 18.0 | 4.24 | 95.76 | |
| 18.7 | 4.15 | 95.85 | Top/Edge Water |
| 19.0 | 3.96 | 96.04 | |
| 20.0 | 3.66 | 96.34 | Bank Full Assumed |

TABLE 1.68 Water Velocity and Unit Discharge
SITE 15, JACQUET RIVER, August 25, 1984

Culvert 1

| Station b(m) | Water Depth d(m) | Revolutions per 30 sec.(2) | Water Velocity V(M/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.00 | 0.00 | - | - | - |
| 0.51 | 0.27 | 21.0 | 0.210 | 0.019 |
| 0.77 | 0.29 | 17.0 | 0.170 | 0.012 |
| 1.03 | 0.27 | 13.0 | 0.130 | 0.011 |
| 1.54 | 0.00 | - | - | - |

$Q_1 = \Sigma q = 0.04$ $m^3/S$
(2) Pygmy Wheel

Culvert 2

| Station b(m) | Water Depth d(m) | Revolutions per 30 sec.(2) | Water Velocity V(M/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.00 | - | - | - |
| 0.58 | 0.36 | 28.0 | 0.28 | 0.056 |
| 0.87 | 0.41 | 33.0 | 0.33 | 0.038 |
| 1.16 | 0.36 | 21.0 | 0.21 | 0.042 |
| 1.74 | 0.00 | - | - | - |

$Q_1 = \Sigma q_1 = 0.04$ $m^3/S$
$Q_2 = \Sigma q_2 = 0.14$ $m^3/S$
$Q = Q_1 + Q_2 = 0.18$ $m^3/S$
(2) Pygmy Wheel

FIG. 1.29 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 16, JACQUET RIVER, AUGUST 26,1984

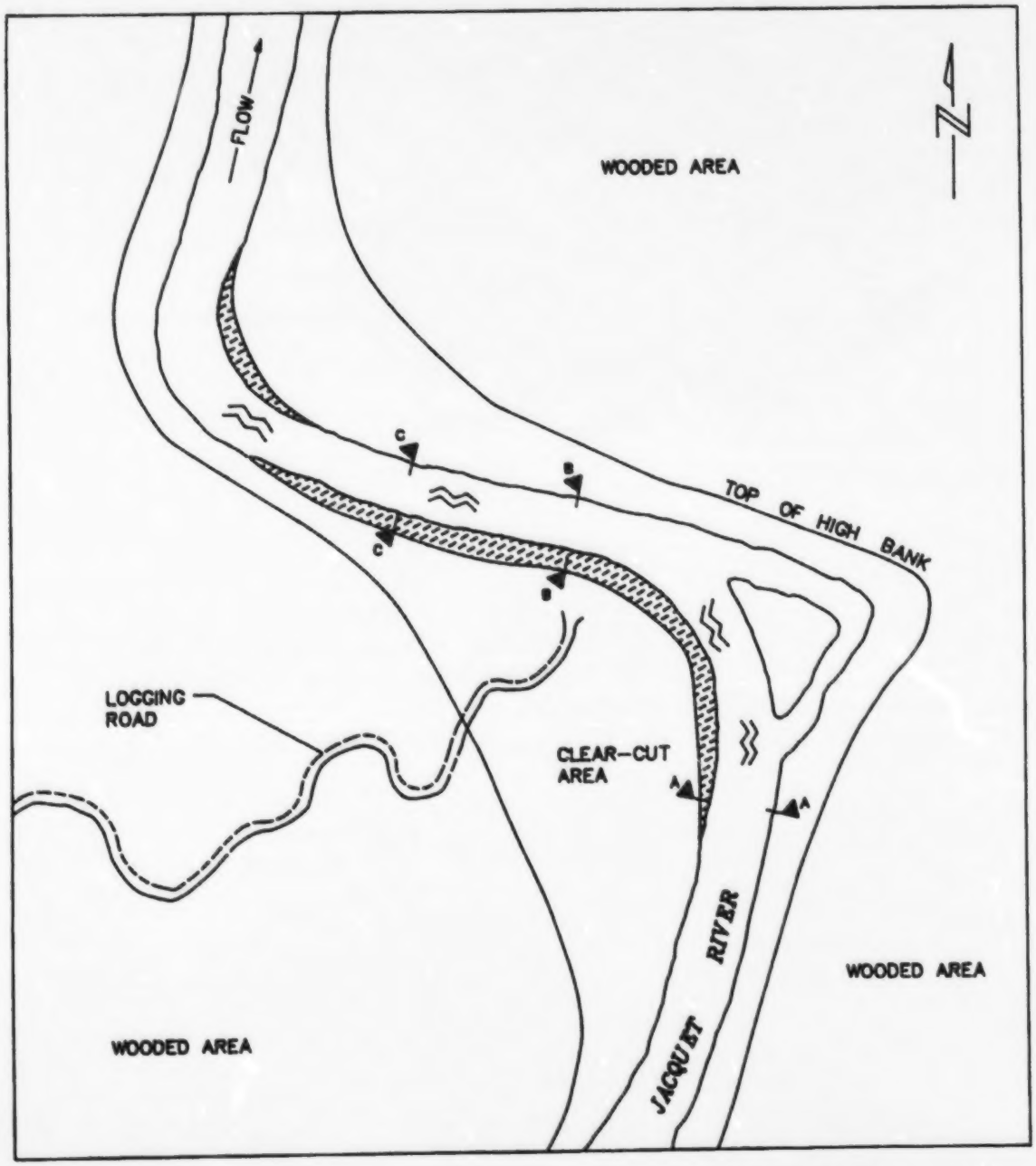


TABLE 1.69 General Site Observations and Remarks
SITE 16, JACQUET RIVER, August 26, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1230 |
| Weather | sunny, some cloud |
| Air temperature (°C) | 25 |
| Electroseining conditions | good |
| Instream cover | rocks |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 20/50/30 |
| Features (estimate,%) | riffle 100 |
| Aquatic vegetation | very sparse, submergent |
| Stream cover | open |
| Banks | stable |
| Shoreline vegetation | riparian grasses, alder, small shrubs |
| Surrounding terrain | upland hardwood - elm, poplar, birch<br>upland conifer - cedar, fir, spruce, pine |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 5 |
| Photographic record | FHD-84-8-NB-179 to 200 |
| General | logging activity |

FIG. 1.30 STREAM CROSS-SECTIONS, SITE 16, JACQUET RIVER AUGUST 26,1984

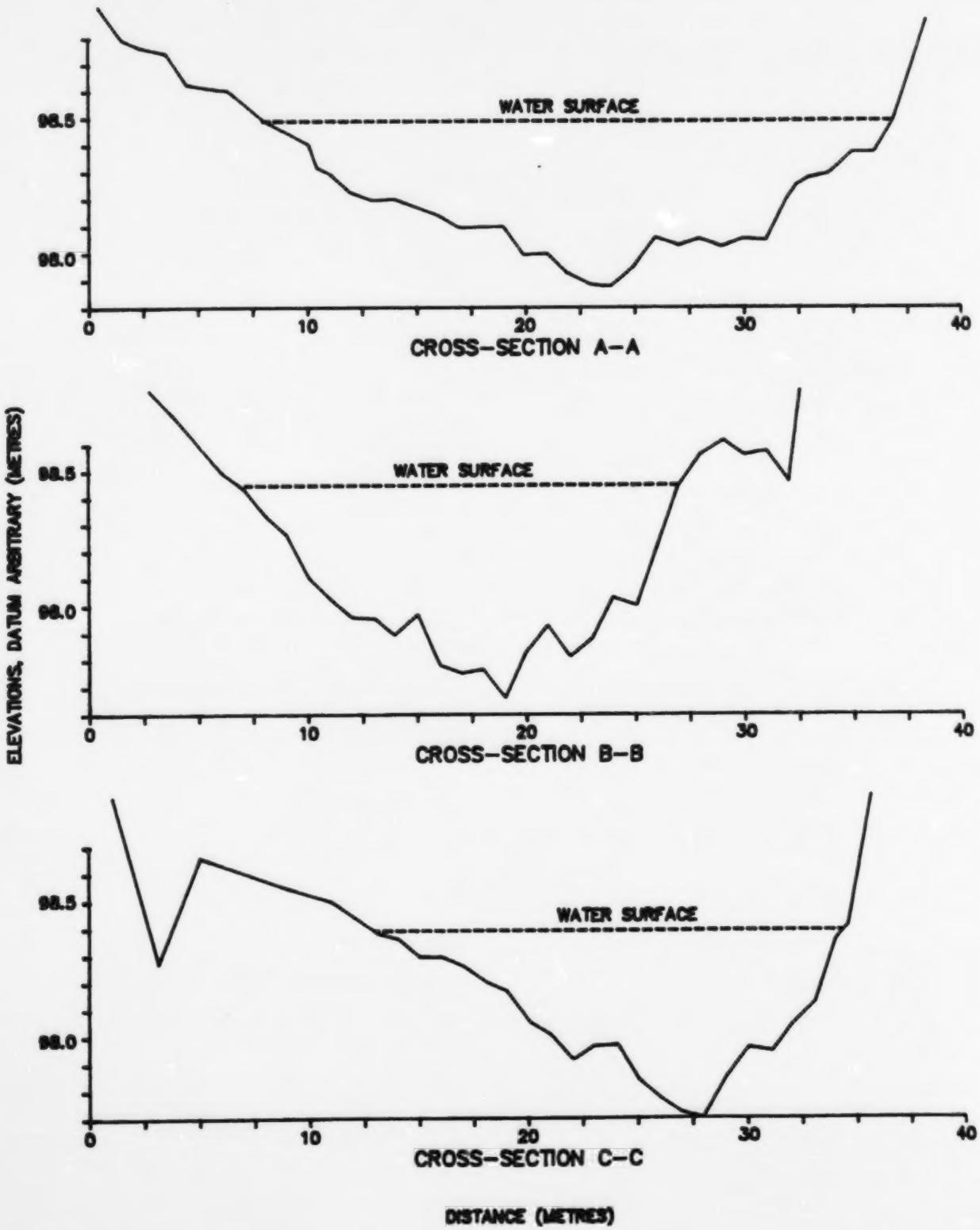


TABLE 1.70 Cross-Sectional Measurements, Transect A-A
SITE 16, JACQUET RIVER, August 26, 1984
(140m Above Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| -9.5 | 1.080 | 98.92 | Bank Full Assumed |
| -8.5 | 1.200 | 98.80 | |
| -7.5 | 1.230 | 98.77 | |
| -6.5 | 1.250 | 98.75 | |
| -5.5 | 1.370 | 98.63 | |
| -4.5 | 1.390 | 98.61 | |
| -3.5 | 1.400 | 98.60 | |
| -2.0 | 1.480 | 98.52 | |
| 0.0 | 1.495 | 98.50 | Top Water |
| 0.0 | 1.585 | 98.41 | Edge Water |
| 0.5 | 1.675 | 98.32 | |
| 1.0 | 1.695 | 98.30 | |
| 2.0 | 1.765 | 98.23 | |
| 3.0 | 1.795 | 98.20 | |
| 4.0 | 1.795 | 98.20 | |
| 5.0 | 1.825 | 98.17 | |
| 6.0 | 1.855 | 98.14 | |
| 7.0 | 1.895 | 98.10 | |
| 8.0 | 1.895 | 98.10 | |
| 9.0 | 1.895 | 98.10 | |
| 10.0 | 1.995 | 98.00 | |
| 11.0 | 1.995 | 98.00 | |
| 12.0 | 2.065 | 97.93 | |
| 13.0 | 2.115 | 97.88 | |
| 14.0 | 2.115 | 97.88 | |
| 15.0 | 2.045 | 97.95 | |
| 16.0 | 1.935 | 98.06 | |
| 17.0 | 1.965 | 98.03 | |
| 18.0 | 1.945 | 98.05 | |
| 19.0 | 1.975 | 98.02 | |
| 20.0 | 1.945 | 98.05 | |
| 21.0 | 1.945 | 98.05 | |
| 22.0 | 1.795 | 98.20 | |
| 22.5 | 1.745 | 98.25 | |
| 22.5 | 1.500 | 98.50 | Top Water |
| 23.0 | 1.720 | 98.28 | |
| 24.0 | 1.700 | 98.30 | |
| 25.0 | 1.620 | 98.38 | |
| 26.0 | 1.620 | 98.38 | |
| 27.0 | 1.500 | 98.50 | Edge Water |
| 27.5 | 1.400 | 98.60 | |
| 28.2 | 1.130 | 98.87 | Bank Full Assumed |

Slope of Site: 0.34%
Drainage Area Tributary to Site: 498 $Km^2$

TABLE 1.71 Cross-Sectional Measurements, Transect B-B
SITE 16, JACQUET RIVER, August 26, 1984
(25m Above Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.71 | 99.29 | Bank Full Assumed |
| 1.0 | 1.02 | 98.98 | |
| 2.0 | 1.14 | 98.86 | |
| 4.0 | 1.32 | 98.68 | |
| 6.0 | 1.51 | 98.49 | |
| 7.0 | 1.57 | 98.43 | Top/Edge Water |
| 8.0 | 1.67 | 98.33 | |
| 9.0 | 1.75 | 98.25 | |
| 10.0 | 1.90 | 98.10 | |
| 11.0 | 1.98 | 98.02 | |
| 12.0 | 2.05 | 97.95 | |
| 13.0 | 2.06 | 97.04 | |
| 14.0 | 2.12 | 97.88 | |
| 15.0 | 2.04 | 97.96 | |
| 16.0 | 2.23 | 97.77 | |
| 17.0 | 2.26 | 97.74 | |
| 18.0 | 2.24 | 97.76 | |
| 19.0 | 2.35 | 97.65 | |
| 20.0 | 2.18 | 97.82 | |
| 21.0 | 2.08 | 97.92 | |
| 22.0 | 2.20 | 97.80 | |
| 23.0 | 2.13 | 97.87 | |
| 24.0 | 1.98 | 98.02 | |
| 25.0 | 2.01 | 97.99 | |
| 26.0 | 1.79 | 98.21 | |
| 27.0 | 1.57 | 98.43 | Top/Edge Water |
| 28.0 | 1.45 | 98.55 | |
| 29.0 | 1.40 | 98.60 | |
| 30.0 | 1.45 | 98.55 | |
| 31.0 | 1.44 | 98.56 | |
| 32.0 | 1.55 | 98.45 | |
| 33.0 | 0.83 | 99.17 | |
| 33.2 | 0.71 | 99.29 | Bank Full Assumed |

TABLE 1.72 Cross-Sectional Measurements, Transect C-C
SITE 16, JACQUET RIVER, August 26, 1984
(5m Below Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.96 | 99.04 | Bank Full Assumed |
| 1.0 | 1.12 | 98.88 | |
| 3.0 | 1.26 | 98.24 | |
| 5.0 | 1.34 | 98.66 | |
| 7.0 | 1.40 | 98.60 | |
| 9.0 | 1.46 | 98.54 | |
| 11.0 | 1.50 | 98.50 | |
| 13.0 | 1.62 | 98.38 | Top/Edge Water |
| 14.0 | 1.64 | 98.36 | |
| 15.0 | 1.70 | 98.30 | |
| 16.0 | 1.70 | 98.30 | |
| 17.0 | 1.74 | 98.26 | |
| 18.0 | 1.80 | 98.20 | |
| 19.0 | 1.83 | 98.17 | |
| 20.0 | 1.95 | 98.05 | |
| 21.0 | 1.99 | 98.01 | |
| 22.0 | 2.08 | 97.92 | |
| 23.0 | 2.04 | 97.96 | |
| 24.0 | 2.03 | 97.97 | |
| 25.0 | 2.15 | 97.85 | |
| 26.0 | 2.22 | 97.78 | |
| 27.0 | 2.28 | 97.72 | |
| 28.0 | 2.30 | 97.70 | |
| 29.0 | 2.14 | 97.86 | |
| 30.0 | 2.04 | 97.96 | |
| 31.0 | 2.05 | 97.95 | |
| 32.0 | 1.95 | 98.05 | |
| 33.0 | 1.87 | 98.13 | |
| 34.0 | 1.63 | 98.37 | |
| 34.5 | 1.59 | 98.41 | Top/Edge Water |
| 35.0 | 1.40 | 98.60 | |
| 36.0 | 0.93 | 99.07 | Bank Full Assumed |

TABLE 1.73 Water Velocity and Unit Discharge
SITE 16, JACQUET RIVER, August 26, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.09 | - | - | - |
| 0.5 | 0.18 | 19.0 | 0.190 | 0.017 |
| 1.0 | 0.20 | 16.0 | 0.160 | 0.024 |
| 2.0 | 0.27 | 30.0 | 0.300 | 0.081 |
| 3.0 | 0.30 | 35.0 | 0.350 | 0.105 |
| 4.0 | 0.30 | 33.0 | 0.330 | 0.099 |
| 5.0 | 0.33 | 38.0 | 0.380 | 0.125 |
| 6.0 | 0.36 | 47.0 | 0.470 | 0.169 |
| 7.0 | 0.40 | 23.0 | 0.230 | 0.092 |
| 8.0 | 0.40 | 20.0 | 0.200 | 0.080 |
| 9.0 | 0.40 | 32.0 | 0.320 | 0.128 |
| 10.0 | 0.50 | 27.0 | 0.270 | 0.135 |
| 11.0 | 0.50 | 33.0 | 0.330 | 0.165 |
| 12.0 | 0.57 | 29.0 | 0.290 | 0.165 |
| 13.0 | 0.62 | 43.0 | 0.430 | 0.267 |
| 14.0 | 0.62 | 37.0 | 0.370 | 0.229 |
| 15.0 | 0.55 | 38.0 | 0.380 | 0.209 |
| 16.0 | 0.44 | 44.0 | 0.440 | 0.193 |
| 17.0 | 0.47 | 44.0 | 0.440 | 0.207 |
| 18.0 | 0.45 | 33.0 | 0.330 | 0.148 |
| 19.0 | 0.48 | 29.0 | 0.290 | 0.139 |
| 20.0 | 0.45 | 26.0 | 0.260 | 0.117 |
| 21.0 | 0.45 | 25.0 | 0.250 | 0.112 |
| 22.0 | 0.30 | 30.0 | 0.300 | 0.090 |
| 22.5 | 0.25 | - | | - |

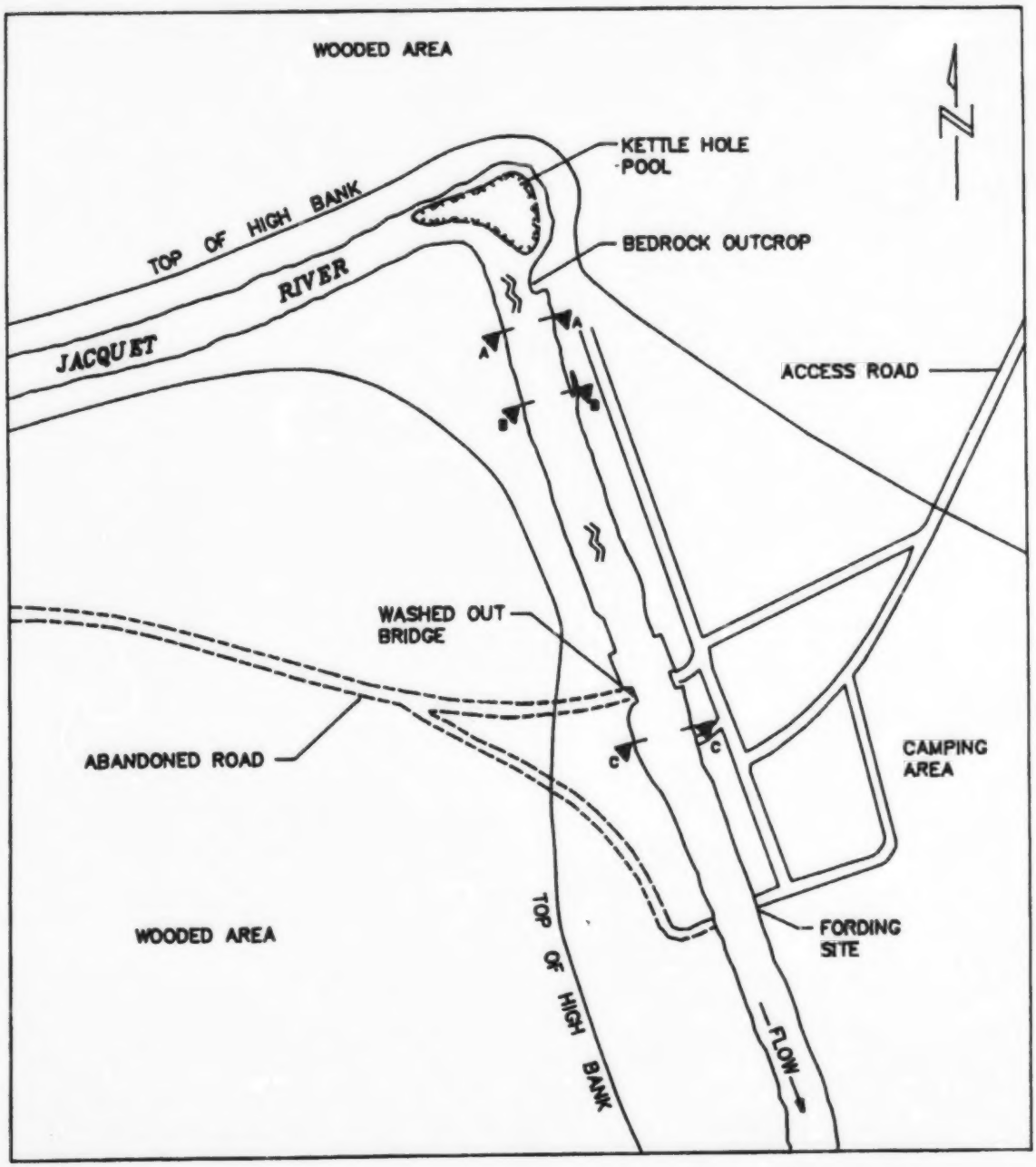
$Q = \Sigma q = 3.09$ $m^3$/S

(2) Pygmy Wheel

TABLE 1.74 Mean Diameter and Ranking of Bed Load Material
SITE 16, JACQUET RIVER, August 26, 1984

| Sample No. | Axis Measurements (cm) x | y | z | Mean Dimension $\phi$ (cm) | Rank |
|---|---|---|---|---|---|
| 1 | 33 | 24 | 05 | 21 | 16 |
| 2 | 45 | 32 | 10 | 29 | 26 |
| 3 | 26 | 20 | 10 | 19 | 14 |
| 4 | 38 | 27 | 05 | 24 | 19 |
| 5 | 50 | 30 | 10 | 30 | 27 |
| 6 | 46 | 26 | 20 | 31 | 28 |
| 7 | 20 | 18 | 06 | 15 | 2 |
| 8 | 42 | 40 | 14 | 32 | 29 |
| 9 | 50 | 19 | 08 | 26 | 22 |
| 10 | 26 | 20 | 06 | 17 | 7 |
| 11 | 43 | 20 | 10 | 24 | 20 |
| 12 | 47 | 20 | 09 | 25 | 21 |
| 13 | 60 | 39 | 25 | 41 | 32 |
| 14 | 35 | 26 | 06 | 22 | 17 |
| 15 | 22 | 25 | 08 | 18 | 11 |
| 16 | 53 | 35 | 22 | 19 | 15 |
| 17 | 30 | 31 | 20 | 27 | 24 |
| 18 | 13 | 03 | 33 | 16 | 5 |
| 19 | 30 | 18 | 07 | 18 | 12 |
| 20 | 40 | 26 | 17 | 28 | 25 |
| 21 | 30 | 15 | 05 | 17 | 8 |
| 22 | 48 | 31 | 26 | 35 | 30 |
| 23 | 22 | 15 | 07 | 15 | 3 |
| 24 | 25 | 20 | 07 | 17 | 9 |
| 25 | 17 | 11 | 05 | 11 | 1 |
| 26 | 54 | 33 | 19 | 35 | 31 |
| 27 | 34 | 24 | 08 | 22 | 18 |
| 28 | 25 | 16 | 06 | 16 | 6 |
| 29 | 32 | 17 | 06 | 18 | 13 |
| 30 | 37 | 26 | 15 | 26 | 23 |
| 31 | 27 | 13 | 10 | 17 | 10 |
| 32 | 11 | 21 | 13 | 15 | 4 |

FIG. 1.31 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 17, JACQUET RIVER, AUGUST 27,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 20 40 60 m (APPROX.)
TOPOGRAPHIC MAP 21-O/16
MILITARY GRID 153 951

TABLE 1.75 General Site Observations and Remarks
SITE 17, JACQUET RIVER, August 27, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1200 - 1530 |
| Weather | sunny, clear |
| Air temperature (°C) | 25 |
| Electroseining conditions | good |
| Instream cover | rocks |
| Bottom | stable |
| Bottom type (visual est.,%) | bedrock/boulder/cobble/ gravel - 30/30/25/15 |
| Features (estimate, %) | riffle - 100 |
| Aquatic vegetation | sparse |
| Stream cover | open |
| Banks | stable |
| Shoreline vegetation | alder, shrubs |
| Surrounding terrain | upland hardwood - birch, aspen, maple<br>upland conifer - fir, cedar |
| Pollution sources | none identified |
| Resource utilization | angling<br>small park adjacent |
| Order stream | 4 |
| Photographic record | FHD-84-8-NB-201 to 210 |
| General | former bridge site<br>fording site |

FIG. 1.32 STREAM CROSS-SECTIONS, SITE 17, JACQUET RIVER AUGUST 27,1984

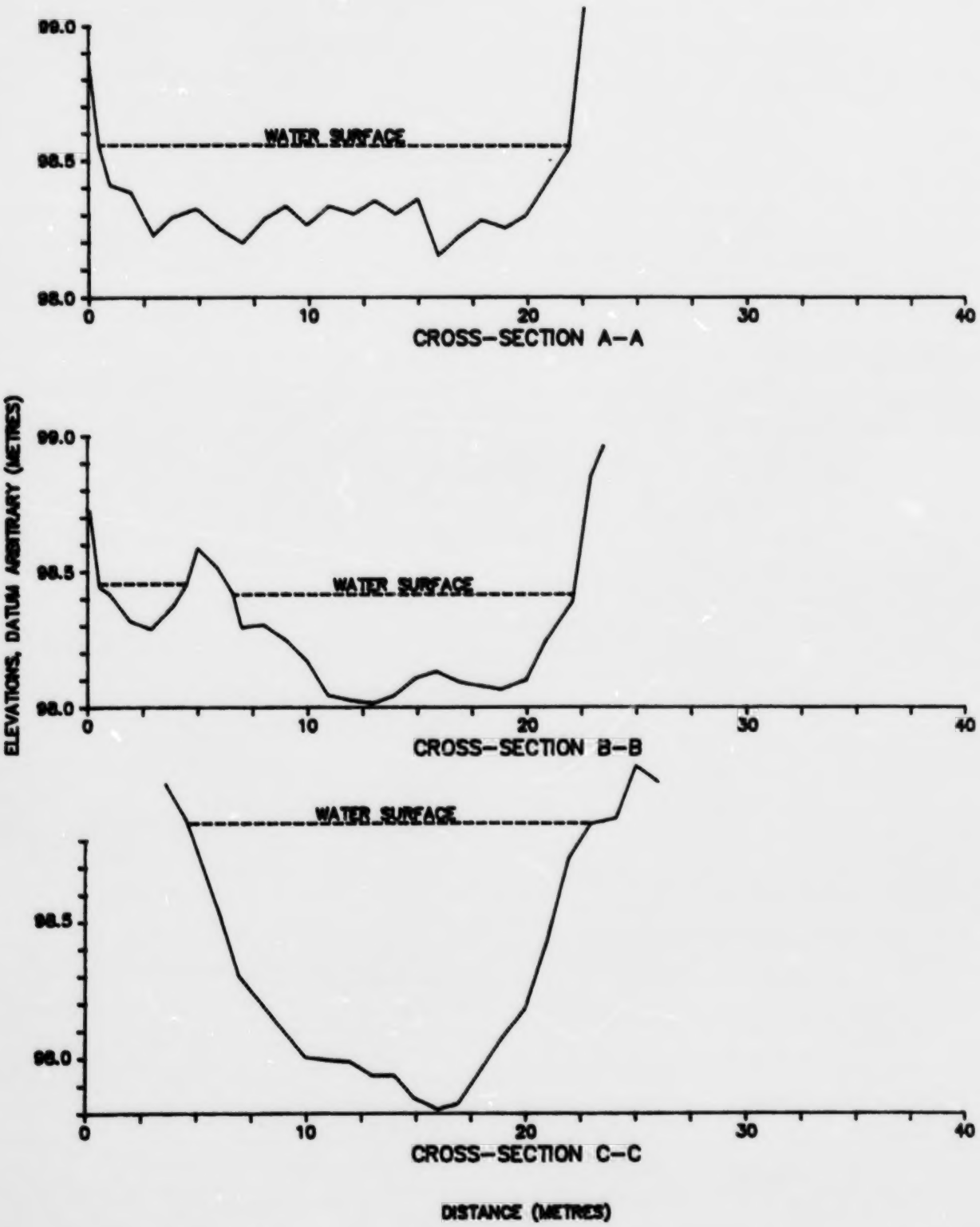


TABLE 1.76 Cross-Sectional Measurements, Transect A-A
SITE 17, JACQUET RIVER, August 27. 1984
(20m Above Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.11 | 98.89 | Bank Full Assumed |
| 0.4 | 1.46 | 98.56 | Top/Edge Water |
| 1.0 | 1.59 | 98.41 | |
| 2.0 | 1.62 | 98.38 | |
| 3.0 | 1.78 | 98.22 | |
| 4.0 | 1.71 | 98.29 | |
| 5.0 | 1.68 | 98.32 | |
| 6.0 | 1.75 | 98.25 | |
| 7.0 | 1.80 | 98.20 | |
| 8.0 | 1.72 | 98.28 | |
| 9.0 | 1.67 | 98.33 | |
| 10.0 | 1.74 | 98.26 | |
| 11.0 | 1.67 | 98.33 | |
| 12.0 | 1.70 | 98.30 | |
| 13.0 | 1.65 | 98.35 | |
| 14.0 | 1.70 | 98.30 | |
| 15.0 | 1.64 | 98.36 | |
| 16.0 | 1.85 | 98.15 | |
| 17.0 | 1.78 | 98.22 | |
| 18.0 | 1.72 | 98.28 | |
| 19.0 | 1.75 | 98.25 | |
| 20.0 | 1.70 | 98.30 | |
| 21.0 | 1.57 | 98.43 | |
| 21.9 | 1.46 | 98.54 | Top/Edge Water |
| 22.3 | 0.93 | 99.07 | |

Slope of Site: 0.65%
Drainage Area Tributary to Site: 267.1 $Km^2$

TABLE 1.77 Cross-Sectional Measurements, Transect B-B
SITE 17, JACQUET RIVER, August 27, 1984
(Midway Between Electroseining Boundaries)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.28 | 98.72 | Bank Full Assumed |
| 0.5 | 1.56 | 98.44 | Top/Edge Water |
| 1.0 | 1.59 | 98.41 | |
| 2.0 | 1.69 | 98.31 | |
| 3.0 | 1.73 | 98.27 | |
| 4.0 | 1.63 | 98.37 | |
| 4.5 | 1.55 | 98.45 | Top/Edge Water |
| 5.0 | 1.42 | 98.58 | Top Bank |
| 6.0 | 1.50 | 98.50 | |
| 6.5 | 1.58 | 98.42 | Top/Edge Water |
| 7.0 | 1.71 | 98.29 | |
| 8.0 | 1.71 | 98.29 | |
| 9.0 | 1.76 | 98.24 | |
| 10.0 | 1.84 | 98.16 | |
| 11.0 | 1.96 | 98.04 | |
| 12.0 | 1.99 | 98.01 | |
| 13.0 | 2.00 | 98.00 | |
| 14.0 | 1.97 | 98.03 | |
| 15.0 | 1.91 | 98.09 | |
| 16.0 | 1.88 | 98.12 | |
| 17.0 | 1.92 | 98.08 | |
| 18.0 | 1.93 | 98.07 | |
| 19.0 | 1.94 | 98.06 | |
| 20.0 | 1.91 | 98.09 | |
| 21.0 | 1.76 | 98.24 | |
| 22.1 | 1.62 | 98.38 | Top/Edge Water |
| 23.0 | 1.16 | 98.84 | Bank Full Assumed |
| 23.5 | 1.05 | 98.95 | |

TABLE 1.78 Cross-Sectional Measurements, Transect C-C
SITE 17, JACQUET RIVER, August 27, 1984
(Below Lower Electroseining Boundary, At Velocity Transect)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 0.36 | 99.64 | Bank Full Assumed |
| 1.0 | 0.66 | 99.34 | |
| 4.8 | 1.14 | 98.86 | Top/Edge Water |
| 6.0 | 1.46 | 98.54 | |
| 7.0 | 1.70 | 98.30 | |
| 8.0 | 1.79 | 98.21 | |
| 9.0 | 1.89 | 98.11 | |
| 10.0 | 1.99 | 98.01 | |
| 11.0 | 2.01 | 97.99 | |
| 12.0 | 2.01 | 97.99 | |
| 13.0 | 2.06 | 97.94 | |
| 14.0 | 2.06 | 97.94 | |
| 15.0 | 2.14 | 97.86 | |
| 16.0 | 2.18 | 97.82 | |
| 17.0 | 2.16 | 97.84 | |
| 18.0 | 2.04 | 97.96 | |
| 19.0 | 1.92 | 98.08 | |
| 20.0 | 1.82 | 98.18 | |
| 21.0 | 1.57 | 98.43 | |
| 22.0 | 1.27 | 98.73 | |
| 23.0 | 1.14 | 98.86 | Top/Edge Water |
| 24.0 | 1.12 | 98.88 | |
| 25.0 | 0.98 | 99.08 | |
| 26.0 | 0.99 | 99.01 | |
| 27.0 | 0.52 | 99.48 | Bank Full Assumed |

TABLE 1.79 Water Velocity and Unit Discharge
SITE 17, JACQUET RIVER, August 27, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(1) | Water Velocity V(m/S) | Unit Discharge $q(m^3/S)$ |
|---|---|---|---|---|
| 4.8 | 0.00 | - | - | - |
| 6.0 | 0.32 | 6.0 | 0.090 | 0.030 |
| 7.0 | 0.56 | 7.0 | 0.102 | 0.057 |
| 8.0 | 0.65 | 8.0 | 0.110 | 0.071 |
| 9.0 | 0.75 | 8.5 | 0.126 | 0.094 |
| 10.0 | 0.85 | 9.5 | 0.138 | 0.117 |
| 11.0 | 0.87 | 8.0 | 0.110 | 0.095 |
| 12.0 | 0.87 | 11.5 | 0.146 | 0.127 |
| 13.0 | 0.92 | 13.5 | 0.172 | 0.158 |
| 14.0 | 0.92 | 9.0 | 0.138 | 0.127 |
| 15.0 | 1.00 | 11.0 | 0.140 | 0.140 |
| 16.0 | 1.04 | 13.0 | 0.165 | 0.172 |
| 17.0 | 1.02 | 14.0 | 0.192 | 0.196 |
| 18.0 | 0.90 | 12.0 | 0.156 | 0.140 |
| 19.0 | 0.78 | 10.0 | 0.119 | 0.093 |
| 20.0 | 0.68 | 8.5 | 0.126 | 0.085 |
| 21.0 | 0.43 | 6.0 | 0.090 | 0.039 |
| 22.0 | 0.13 | - | - | - |
| 23.0 | 0.00 | - | - | - |

$Q = \Sigma q = 1.74\ m^3/S$
(1) Price AA Wheel

TABLE 1.80 Mean Diameter and Ranking of Bed Load Material
SITE 17, JACQUET RIVER, August 27, 1984

| Sample No. | Axis Measurements (cm) | | | Mean Dimension | Rank |
|---|---|---|---|---|---|
| | x | y | z | $\phi$ (cm) | |
| 1 | 70 | 45 | 25 | 47 | 32 |
| 2 | 43 | 13 | 10 | 22 | 20 |
| 3 | 37 | 43 | 20 | 33 | 29 |
| 4 | 26 | 20 | 06 | 17 | 7 |
| 5 | 23 | 20 | 12 | 18 | 10 |
| 6 | 27 | 13 | 07 | 16 | 5 |
| 7 | 20 | 14 | 11 | 15 | 3 |
| 8 | 24 | 18 | 10 | 17 | 8 |
| 9 | 30 | 29 | 20 | 26 | 24 |
| 10 | 08 | 15 | 09 | 11 | 1 |
| 11 | 25 | 14 | 14 | 18 | 11 |
| 12 | 40 | 26 | 17 | 28 | 26 |
| 13 | 29 | 16 | 10 | 18 | 12 |
| 14 | 40 | 30 | 12 | 27 | 25 |
| 15 | 17 | 20 | 15 | 17 | 9 |
| 16 | 23 | 27 | 10 | 20 | 15 |
| 17 | 33 | 30 | 20 | 28 | 27 |
| 18 | 40 | 14 | 05 | 20 | 16 |
| 19 | 24 | 30 | 15 | 23 | 21 |
| 20 | 30 | 23 | 08 | 20 | 17 |
| 21 | 20 | 19 | 06 | 15 | 4 |
| 22 | 38 | 29 | 24 | 30 | 28 |
| 23 | 25 | 20 | 15 | 20 | 18 |
| 24 | 14 | 24 | 10 | 16 | 6 |
| 25 | 45 | 20 | 05 | 23 | 22 |
| 26 | 20 | 26 | 13 | 20 | 19 |
| 27 | 22 | 15 | 06 | 43 | 31 |
| 28 | 16 | 30 | 06 | 52 | 33 |
| 29 | 30 | 28 | 13 | 24 | 23 |
| 30 | 32 | 18 | 04 | 18 | 13 |
| 31 | 50 | 33 | 26 | 36 | 30 |
| 32 | 18 | 11 | 05 | 11 | 2 |

FIG. 1.33 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 18, UPPER SOUTH BRANCH JACQUET RIVER, AUGUST 28,1984

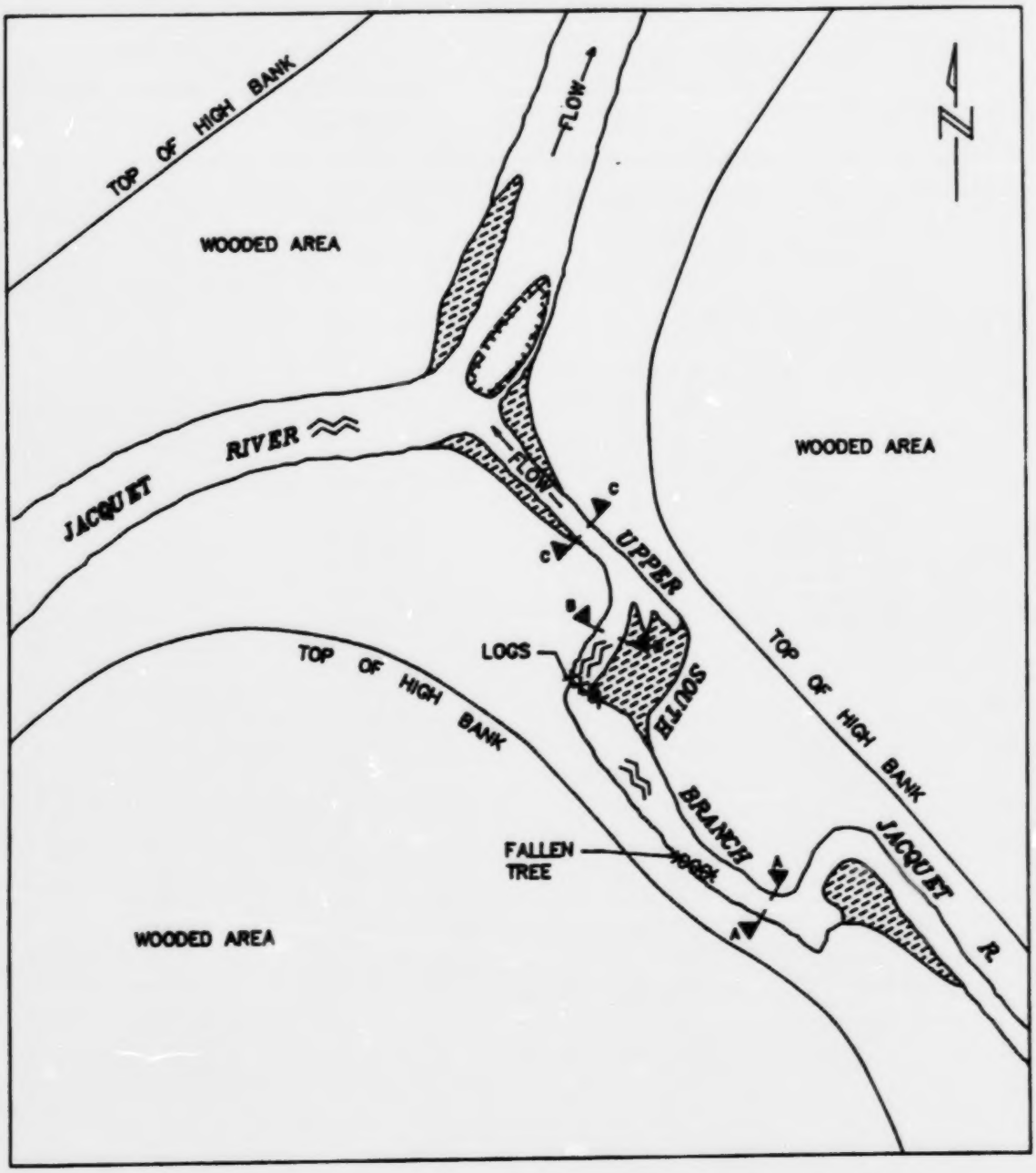


TABLE 1.81 General Site Observations and Remarks
SITE 18, UPPER SOUTH BRANCH JACQUET RIVER
August 28, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 0930 - 1230 |
| Weather | sunny, some cloud |
| Air temperature (°C) | 26 |
| Electroseining conditions | difficult in places - dense canopy |
| Instream cover | rocks, undercut banks, logs, stumps |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 5/20/75 |
| Features (estimate,%) | riffle - 100 |
| Aquatic vegetation | sparse |
| Stream cover | open |
| Banks | stable |
| Shoreline vegetation | ferns, riparian grasses, alder shrub, trees |
| Surrounding terrain | upland hardwood - birch, poplar upland conifer - fir, spruce, cedar |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 3 |
| Photographic record | FHD-84-8-NB-211 to 219 |
| General | |

FIG. 1.34 STREAM CROSS-SECTIONS, SITE 18, UPPER SOUTH BRANCH JACQUET RIVER, AUGUST 28,1984

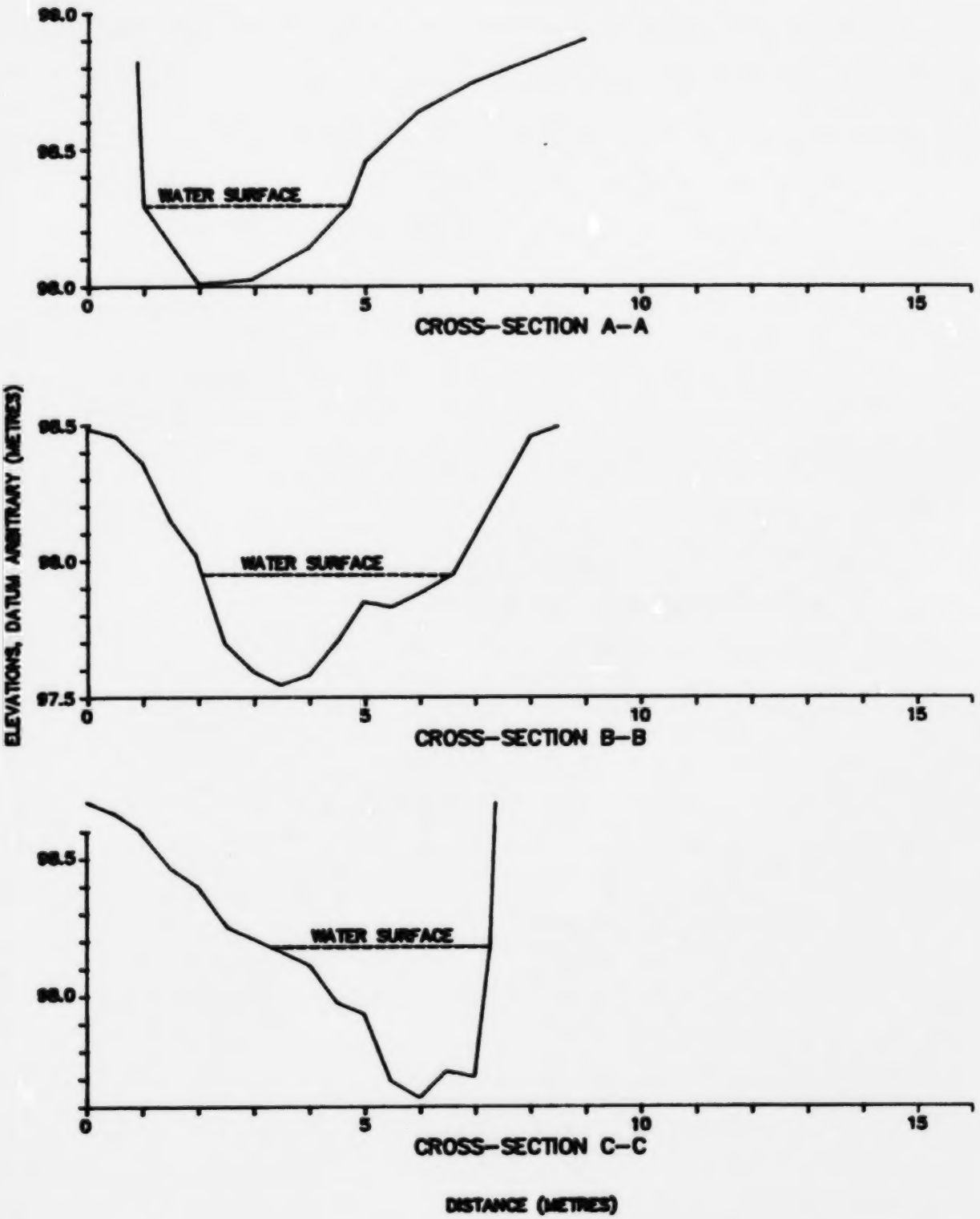


TABLE 1.82 Cross-Sectional Measurements, Transect A-A
SITE 18, UPPER SOUTH BRANCH JACQUET RIVER
August 28, 1984
(1m Above Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.9 | 1.18 | 98.82 | Bank Full Assumed |
| 1.0 | 1.70 | 98.30 | Top/Edge Water |
| 2.0 | 1.99 | 98.01 | |
| 3.0 | 1.97 | 98.03 | |
| 4.0 | 1.86 | 98.14 | |
| 4.7 | 1.70 | 98.30 | Top/Edge Water |
| 5.0 | 1.55 | 98.45 | |
| 6.0 | 1.36 | 98.64 | |
| 7.0 | 1.25 | 98.75 | |
| 9.0 | 1.09 | 98.91 | Bank Full Assumed |

TABLE 1.83 Cross-Sectional Measurements, Transect B-B
SITE 18, UPPER SOUTH BRANCH JACQUET RIVER
August 28, 1984
(1m Above Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.53 | 98.47 | Bank Full Assumed |
| 0.5 | 1.55 | 98.45 | |
| 1.0 | 1.65 | 98.35 | |
| 1.5 | 1.86 | 98.14 | |
| 2.0 | 2.00 | 98.00 | |
| 2.1 | 2.07 | 97.93 | Top/Edge Water |
| 2.5 | 2.31 | 97.69 | |
| 3.0 | 2.41 | 97.59 | |
| 3.5 | 2.46 | 97.54 | |
| 4.0 | 2.43 | 97.57 | |
| 4.5 | 2.31 | 97.69 | |
| 5.0 | 2.26 | 97.74 | |
| 5.5 | 2.28 | 97.72 | |
| 6.0 | 2.23 | 97.77 | |
| 6.6 | 2.06 | 97.94 | Top/Edge Water |
| 7.0 | 1.93 | 98.07 | |
| 7.5 | 1.73 | 98.27 | |
| 8.0 | 1.55 | 98.45 | |
| 8.5 | 1.52 | 98.48 | Bank Full Assumed |

TABLE 1.84 Cross-Sectional Measurements, Transect C-C
SITE 18, UPPER SOUTH BRANCH JACQUET RIVER
August 28, 1984
(25m Below Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.0 | 1.29 | 98.71 | Bank Full Assumed |
| 0.5 | 1.33 | 98.67 | |
| 1.0 | 1.40 | 98.60 | |
| 1.5 | 1.53 | 98.47 | |
| 2.0 | 1.60 | 98.40 | |
| 2.5 | 1.74 | 98.26 | |
| 3.0 | 1.79 | 98.21 | |
| 3.4 | 1.82 | 98.18 | Top/Edge Water |
| 4.0 | 1.88 | 98.12 | |
| 4.5 | 2.02 | 97.98 | |
| 5.0 | 2.06 | 97.94 | |
| 5.5 | 2.30 | 97.70 | |
| 6.0 | 2.36 | 97.64 | |
| 6.5 | 2.27 | 97.73 | |
| 7.0 | 2.29 | 97.71 | |
| 7.3 | 1.82 | 98.18 | Top/Edge Water |
| 7.4 | 1.29 | 98.71 | Bank Full Assumed |
| 7.5 | 1.12 | 98.88 | |

Slope of Site: 1%
Drainage Area Tributary to Site: 41.3 $Km^2$

TABLE 1.85 Water Velocity and Unit Discharge
SITE 18, UPPER SOUTH BRANCH JACQUET RIVER
August 28, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.17 | 10.0 | 0.100 | 0.002 |
| 0.3 | 0.24 | 20.0 | 0.200 | 0.014 |
| 0.6 | 0.26 | 45.0 | 0.450 | 0.035 |
| 0.9 | 0.32 | 52.0 | 0.520 | 0.050 |
| 1.2 | 0.32 | 30.0 | 0.300 | 0.029 |
| 1.5 | 0.39 | 15.0 | 0.150 | 0.009 |

$Q = \Sigma q = 0.14$ $m^3$/S
(2) Pygmy Wheel

TABLE 1.86 Mean Diameter and Ranking of Bed Load Material
SITE 18, UPPER SOUTH BRANCH JACQUET RIVER
August 28, 1984

| Sample No. | Axis Measurements (cm) x | y | z | Mean Dimension $\phi$ (cm) | Rank |
|---|---|---|---|---|---|
| 1 | 21 | 18 | 06 | 15 | 16 |
| 2 | 20 | 09 | 13 | 14 | 13 |
| 3 | 53 | 22 | 20 | 32 | 32 |
| 4 | 22 | 21 | 09 | 17 | 24 |
| 5 | 17 | 15 | 02 | 11 | 5 |
| 6 | 12 | 05 | 09 | 09 | 2 |
| 7 | 37 | 33 | 20 | 30 | 30 |
| 8 | 23 | 08 | 16 | 16 | 22 |
| 9 | 13 | 16 | 22 | 17 | 25 |
| 10 | 10 | 25 | 07 | 14 | 14 |
| 11 | 33 | 08 | 13 | 18 | 26 |
| 12 | 15 | 11 | 11 | 12 | 8 |
| 13 | 17 | 17 | 12 | 15 | 17 |
| 14 | 18 | 04 | 09 | 10 | 4 |
| 15 | 14 | 15 | 14 | 14 | 15 |
| 16 | 25 | 04 | 10 | 13 | 10 |
| 17 | 20 | 07 | 06 | 11 | 6 |
| 18 | 14 | 15 | 16 | 15 | 18 |
| 19 | 47 | 22 | 20 | 30 | 31 |
| 20 | 15 | 08 | 10 | 11 | 7 |
| 21 | 12 | 07 | 21 | 13 | 11 |
| 22 | 16 | 28 | 05 | 16 | 23 |
| 23 | 15 | 20 | 05 | 13 | 12 |
| 24 | 08 | 05 | 04 | 06 | 1 |
| 25 | 16 | 09 | 20 | 15 | 19 |
| 26 | 25 | 29 | 06 | 20 | 29 |
| 27 | 10 | 03 | 15 | 09 | 3 |
| 28 | 14 | 21 | 18 | 18 | 27 |
| 29 | 13 | 07 | 15 | 12 | 9 |
| 30 | 16 | 15 | 15 | 15 | 20 |
| 31 | 20 | 30 | 08 | 19 | 28 |
| 32 | 20 | 17 | 08 | 15 | 21 |

FIG. 1.35 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 19, LOWER MCNAIR BROOK, AUGUST 28,1984

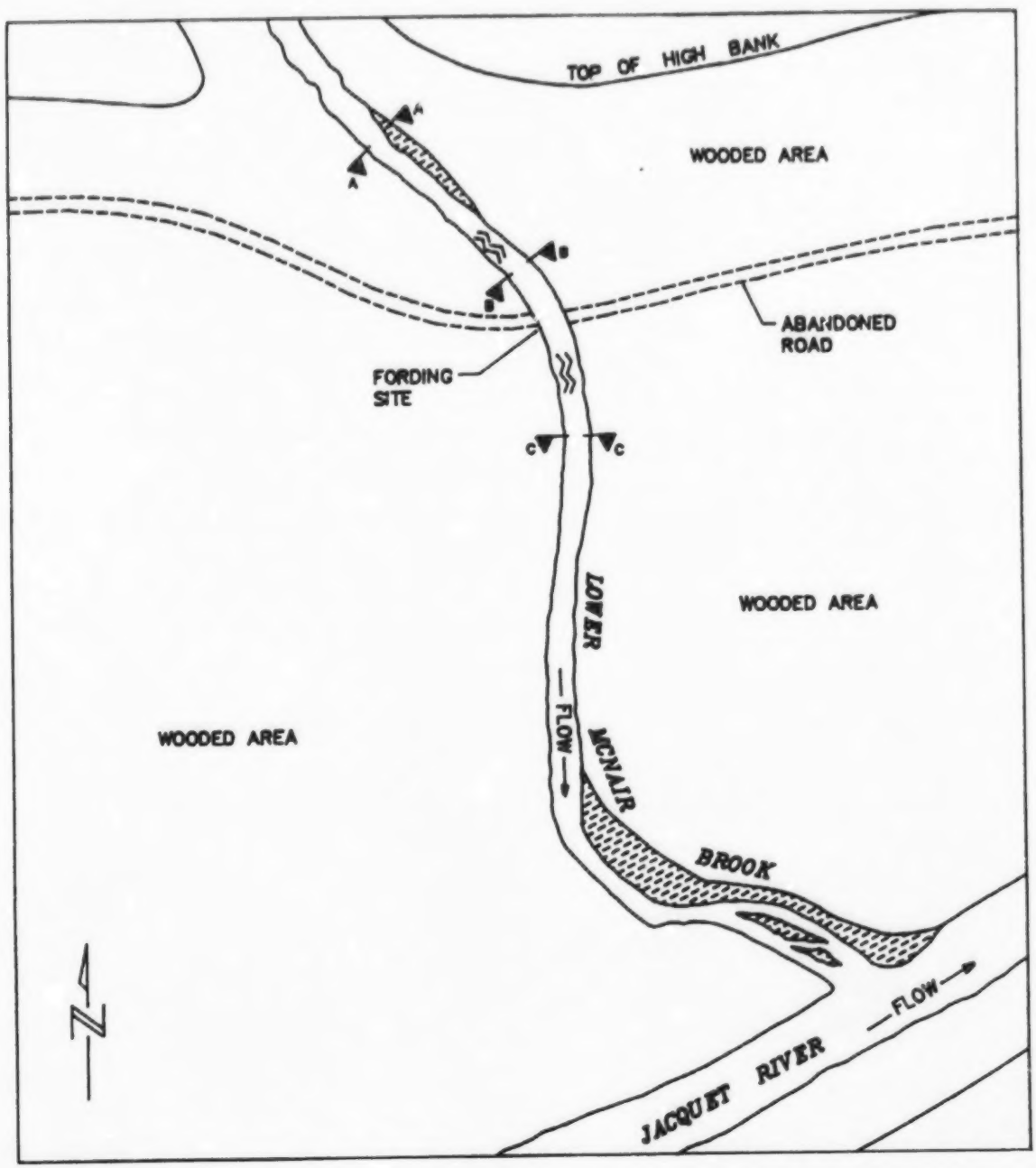


TABLE 1.87 General Site Observations and Remarks
SITE 19, LOWER MCNAIR BROOK, August 28, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1400 - 1630 |
| Weather | overcast |
| Air temperature (°C) | 22 |
| Electroseining conditions | difficult in areas of heavy alder cover |
| Instream cover | undercut banks, rocks, logs |
| Bottom | stable |
| Bottom type (visual est., %) | boulder/cobble/gravel - 15/25/60 |
| Features (estimate, %) | riffle/run - 70/30 |
| Aquatic vegetation | nil |
| Stream cover | partly open |
| Banks | stable |
| Shoreline vegetation | sparse riparian grasses, ferns shrubs, trees |
| Surrounding terrain | upland hardwood - elm, aspen, birch, maple |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 3 |
| Photographic record | FHD-84-8-NB-220 to 224 |
| General | |

FIG. 1.36 STREAM CROSS-SECTIONS, SITE 19, LOWER MCNAIR BROOK AUGUST 28,1984

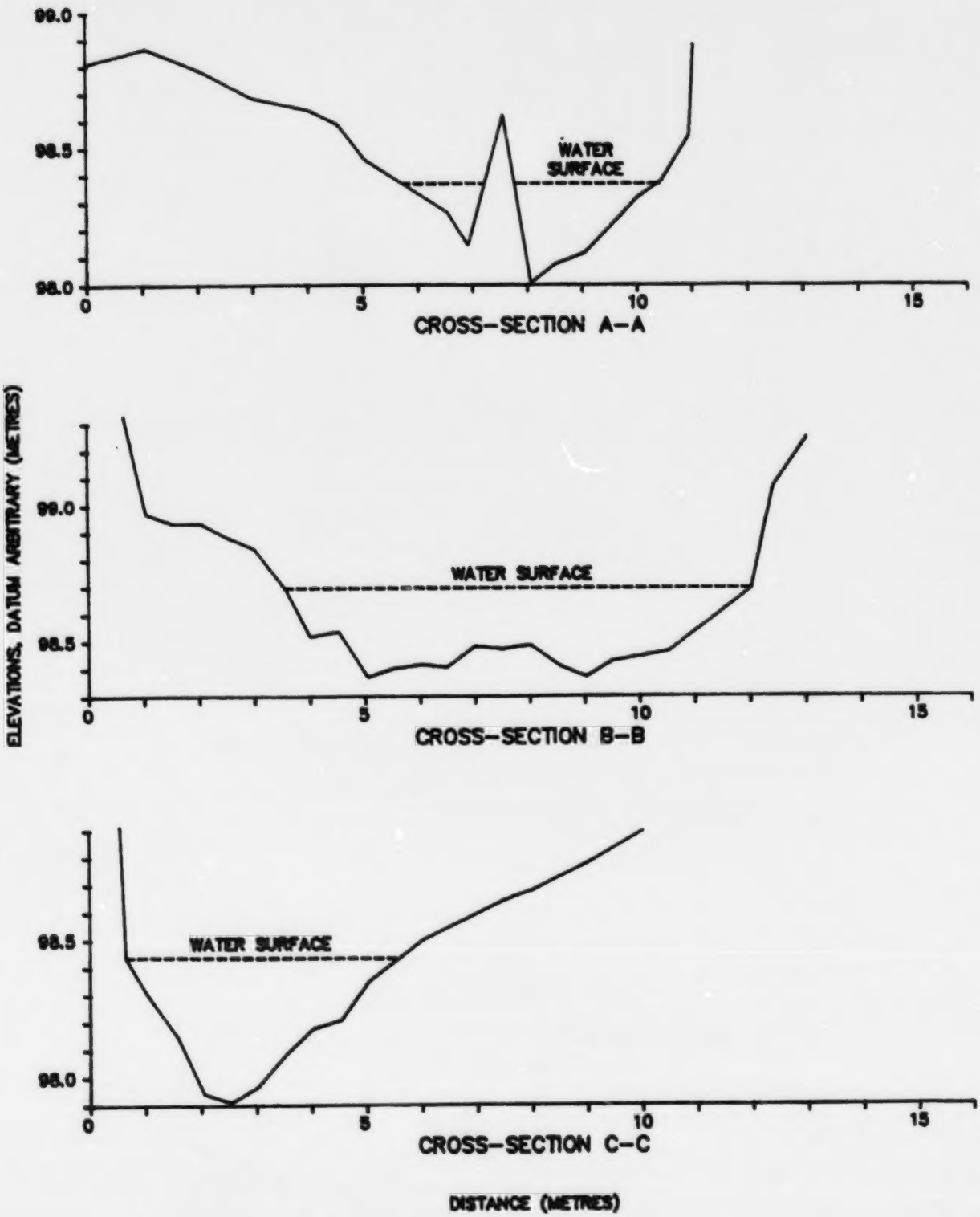


TABLE 1.88 Cross-Sectional Measurements, Transect A-A
SITE 19, LOWER MCNAIR BROOK, August 28, 1984
(15m Below Upper Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 1.0 | 1.12 | 98.88 | Bank Full Assumed |
| 1.1 | 1.46 | 98.54 | |
| 1.6 | 1.63 | 98.37 | Top/Edge Water |
| 2.0 | 1.69 | 98.31 | |
| 2.5 | 1.79 | 98.21 | |
| 3.0 | 1.89 | 98.11 | |
| 3.5 | 1.93 | 98.07 | |
| 4.0 | 2.00 | 98.00 | |
| 4.5 | 1.38 | 98.62 | |
| 5.1 | 1.87 | 98.13 | |
| 5.5 | 1.74 | 98.26 | |
| 6.0 | 1.66 | 98.34 | |
| 6.3 | 1.63 | 98.37 | Top/Edge Water |
| 7.0 | 1.54 | 98.46 | |
| 7.5 | 1.42 | 98.58 | |
| 8.0 | 1.37 | 98.63 | |
| 9.0 | 1.32 | 98.68 | |
| 10.0 | 1.22 | 98.78 | |
| 11.0 | 1.15 | 98.85 | Bank Full Assumed |
| 12.0 | 1.18 | 98.82 | |

Slope of Site: 1.3%
Drainage Area Tributary to Site: 36.8 $Km^2$

TABLE 1.89 Cross-Sectional Measurements, Transect B-B
SITE 19, LOWER MCNAIR BROOK, August 28, 1984
(10m Above Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.6 | 0.68 | 99.32 | Bank Full Assumed |
| 1.0 | 1.04 | 98.96 | |
| 1.5 | 1.07 | 98.93 | |
| 2.0 | 1.09 | 98.91 | |
| 2.5 | 1.13 | 98.87 | |
| 3.0 | 1.17 | 98.83 | |
| 3.5 | 1.32 | 98.68 | Top/Edge Water |
| 4.0 | 1.50 | 98.50 | |
| 4.5 | 1.48 | 98.52 | |
| 5.0 | 1.64 | 98.36 | |
| 5.5 | 1.61 | 98.39 | |
| 6.0 | 1.60 | 98.40 | |
| 6.5 | 1.60 | 98.40 | |
| 7.0 | 1.53 | 98.47 | |
| 7.5 | 1.54 | 98.46 | |
| 8.0 | 1.53 | 98.47 | |
| 8.5 | 1.60 | 98.40 | |
| 9.0 | 1.64 | 98.36 | |
| 9.5 | 1.58 | 98.42 | |
| 10.0 | 1.57 | 98.43 | |
| 10.5 | 1.55 | 98.45 | |
| 11.0 | 1.47 | 98.53 | |
| 12.0 | 1.32 | 98.68 | Top/Edge Water |
| 12.4 | 0.95 | 99.05 | |
| 13.0 | 0.76 | 99.24 | Bank Full Assumed |

TABLE 1.90 Cross-Sectional Measurements, Transect C-C
SITE 19, LOWER MCNAIR BROOK, August 28, 1984
(30m Below Lower Electroseining Boundary)

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| 0.5 | 1.08 | 98.92 | Bank Full Assumed |
| 0.6 | 1.56 | 98.44 | Top/Edge Water |
| 1.0 | 1.70 | 98.30 | |
| 1.5 | 1.85 | 98.15 | |
| 2.0 | 2.05 | 97.95 | |
| 2.5 | 2.09 | 97.91 | |
| 3.0 | 2.03 | 97.97 | |
| 3.5 | 1.91 | 98.09 | |
| 4.0 | 1.82 | 98.18 | |
| 4.5 | 1.79 | 98.21 | |
| 5.0 | 1.65 | 98.35 | |
| 5.6 | 1.56 | 98.44 | Top/Edge Water |
| 6.0 | 1.50 | 98.50 | |
| 7.0 | 1.44 | 98.56 | |
| 7.5 | 1.35 | 98.65 | |
| 8.0 | 1.32 | 98.68 | |
| 9.0 | 1.22 | 98.78 | |
| 10.0 | 1.10 | 98.90 | Bank Full Assumed |

TABLE 1.91 Water Velocity and Unit Discharge
SITE 19. LOWER MCNAIR BROOK
August 28, 1984

| Station b(m) | Water Depth d(m) | Revolutions Per 30 sec.(2) | Water Velocity V(m/S) | Unit Discharge q($m^3$/S) |
|---|---|---|---|---|
| 0.0 | 0.25 | - | - | - |
| 0.5 | 0.27 | 10.0 | 0.100 | 0.013 |
| 1.0 | 0.36 | 26.0 | 0.260 | 0.047 |
| 1.5 | 0.49 | 29.0 | 0.290 | 0.071 |
| 2.0 | 0.54 | 25.0 | 0.250 | 0.067 |
| 2.5 | 0.49 | 21.0 | 0.210 | 0.046 |
| 2.9 | 0.25 | - | - | - |

$Q = \Sigma q = 0.24\ m^3/S$
(2) Pygmy Wheel

TABLE 1.92 Mean Diameter and Ranking of Bed Load Material
SITE 19, LOWER MCNAIR BROOK, August 28, 1984

| Sample No. | Axis Measurements (cm) x | y | z | Mean Dimension $\phi$ (cm) | Rank |
|---|---|---|---|---|---|
| 1 | 26 | 10 | 04 | 13 | 7 |
| 2 | 26 | 20 | 08 | 18 | 18 |
| 3 | 20 | 15 | 09 | 15 | 11 |
| 4 | 20 | 16 | 09 | 15 | 12 |
| 5 | 14 | 24 | 10 | 16 | 15 |
| 6 | 45 | 27 | 22 | 31 | 32 |
| 7 | 20 | 05 | 14 | 13 | 8 |
| 8 | 42 | 23 | 16 | 27 | 31 |
| 9 | 33 | 20 | 11 | 21 | 24 |
| 10 | 14 | 12 | 06 | 11 | 2 |
| 11 | 22 | 18 | 05 | 15 | 13 |
| 12 | 30 | 26 | 17 | 24 | 28 |
| 13 | 26 | 26 | 13 | 22 | 25 |
| 14 | 11 | 20 | 06 | 12 | 4 |
| 15 | 43 | 20 | 12 | 25 | 30 |
| 16 | 32 | 23 | 12 | 22 | 26 |
| 17 | 20 | 25 | 13 | 19 | 20 |
| 18 | 25 | 14 | 08 | 11 | 3 |
| 19 | 22 | 20 | 17 | 20 | 23 |
| 20 | 14 | 10 | 06 | 10 | 1 |
| 21 | 19 | 18 | 11 | 16 | 16 |
| 22 | 09 | 25 | 06 | 13 | 9 |
| 23 | 25 | 27 | 15 | 22 | 27 |
| 24 | 32 | 18 | 07 | 19 | 21 |
| 25 | 16 | 14 | 06 | 12 | 5 |
| 26 | 15 | 18 | 10 | 14 | 10 |
| 27 | 10 | 19 | 17 | 15 | 14 |
| 28 | 16 | 13 | 07 | 12 | 6 |
| 29 | 17 | 23 | 10 | 17 | 17 |
| 30 | 34 | 18 | 21 | 24 | 29 |
| 31 | 23 | 22 | 10 | 18 | 19 |
| 32 | 30 | 20 | 08 | 19 | 22 |

FIG. 1.37 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 20, CARL GULCH, AUGUST 29,1984

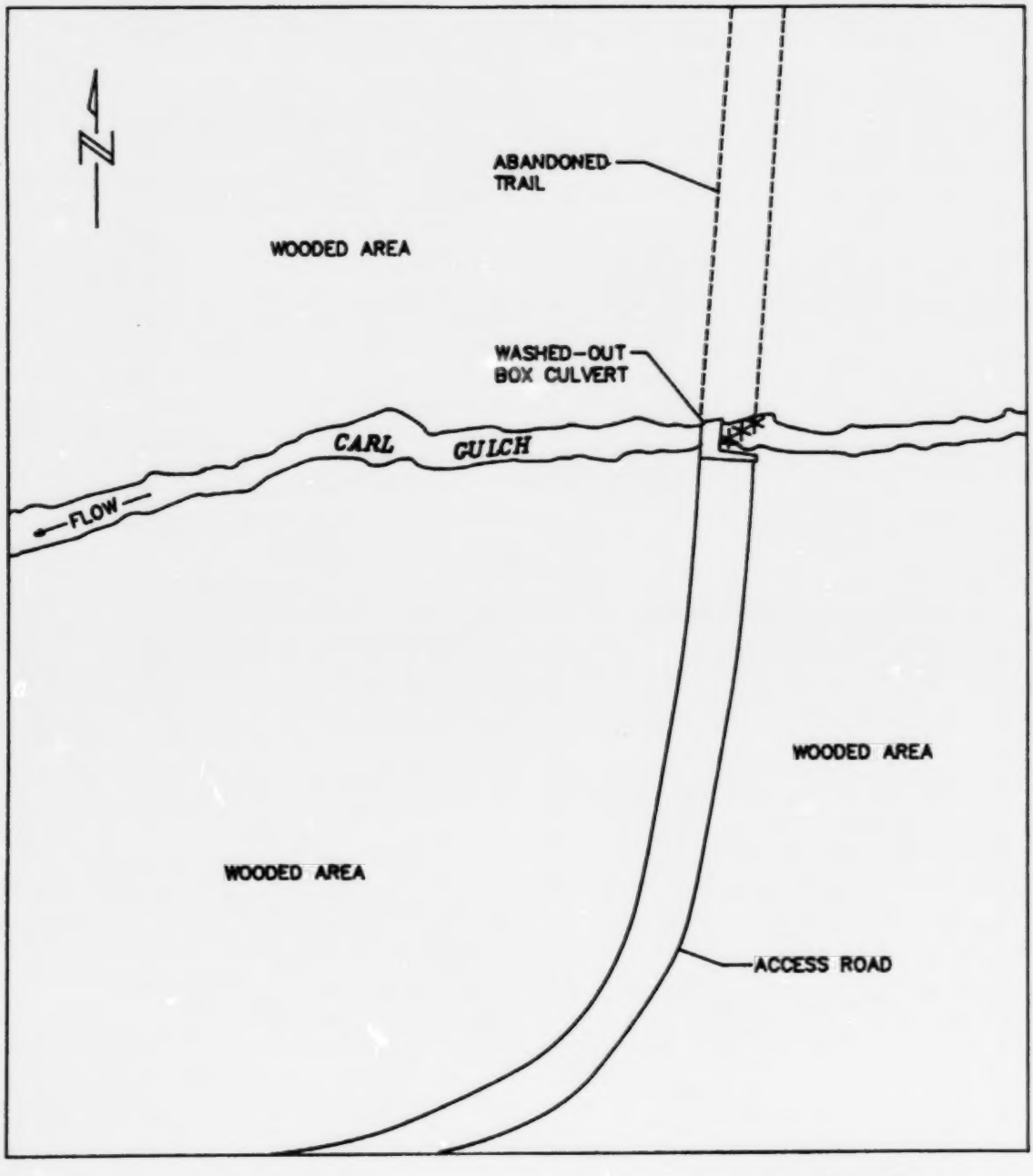
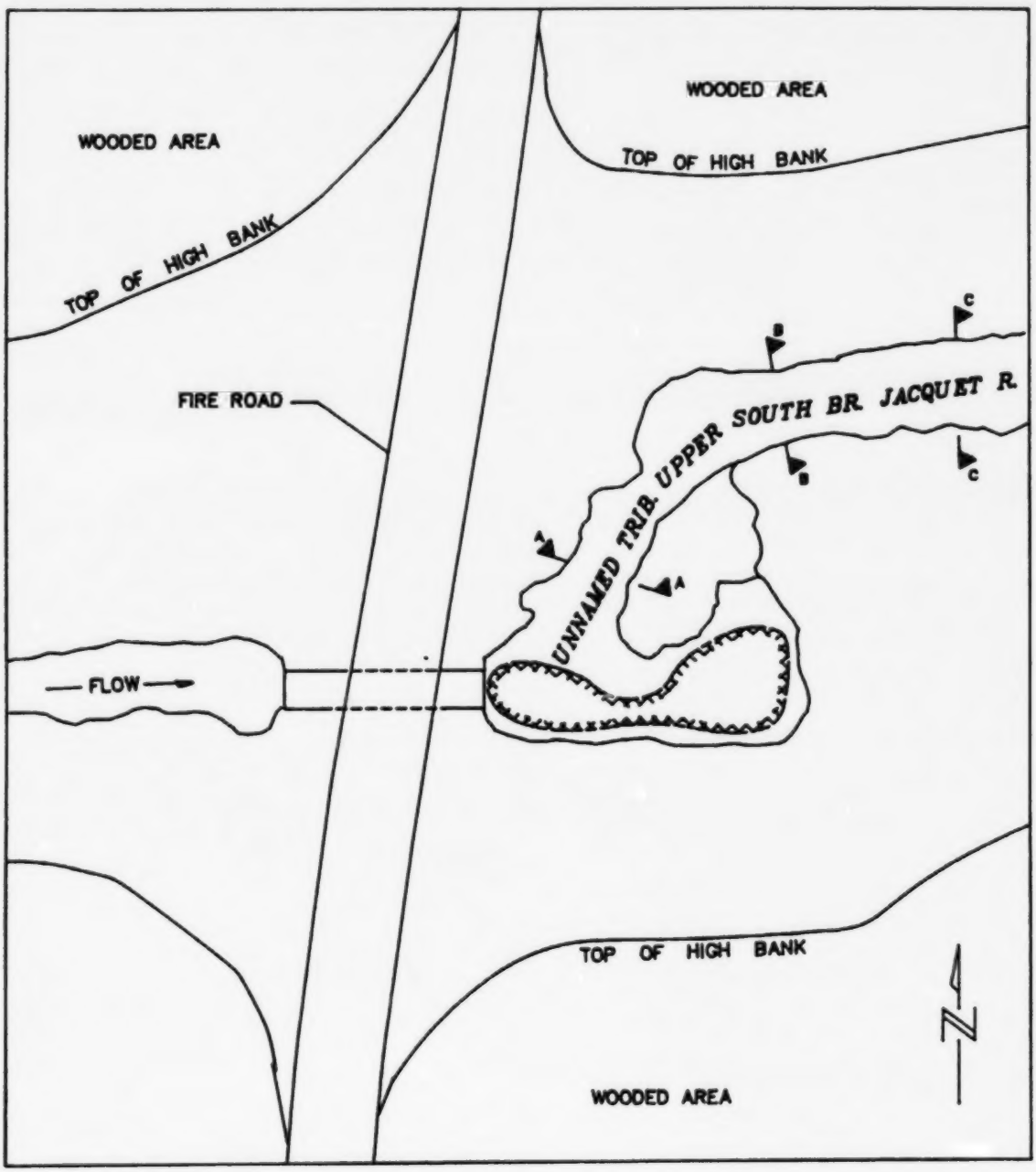


TABLE 1.93 General Site Observations and Remarks
SITE 20, CARL GULCH, August 29, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1230 |
| Weather | sunny, clear |
| Air temperature (°C) | 28 |
| Electroseining conditions | very difficult - heavy cover |
| Instream cover | not noted |
| Bottom | stable |
| Bottom type (visual est.,%) | gravel/cobble/sand - 80/10/10 |
| Features (estimate,%) | riffle - 100 |
| Aquatic vegetation | not noted |
| Stream cover | dense |
| Banks | stable |
| Shoreline vegetation | alder |
| Surrounding terrain | upland hardwood - aspen<br>upland conifer - present |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic record | FHD-84-8-NB-225 to 228 |
| General | |

FIG. 1.38 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 21, UNNAMED TRIBUTARY TO UPPER SOUTH BRANCH JACQUET RIVER, AUGUST 29,1984




LEGEND

- CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 5 10 m (APPROX.)
TOPOGRAPHIC MAP 21-O/9
MILITARY GRID 083 844

TABLE 1.94 General Site Observations and Remarks
SITE 21, UNNAMED TRIBUTARY to UPPER SOUTH BRANCH JACQUET RIVER, August 29, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1300 |
| Weather | sunny, clear |
| Air temperature (°C) | 28 |
| Electroseining conditions | not noted |
| Instream cover | moderate amounts eel grass |
| Bottom | stable |
| Bottom type (visual est.,%) | gravel/cobble/sand - 80/15/5 |
| Features (estimate,%) | riffle - 100 |
| Aquatic vegetation | eel grass |
| Stream cover | partly open |
| Banks | stable |
| Shoreline vegetation | alder, sedge, riparian grass |
| Surrounding terrain | upland conifer dominant, fir some cedar |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic record | FHD-84-8-NB-230 to 233 |
| General | spotcheck only |

FIG. 1.39 STREAM CROSS-SECTIONS, SITE 21, UNNAMED TRIBUTARY UPPER SOUTH BRANCH JACQUET RIVER, AUGUST 29,1984

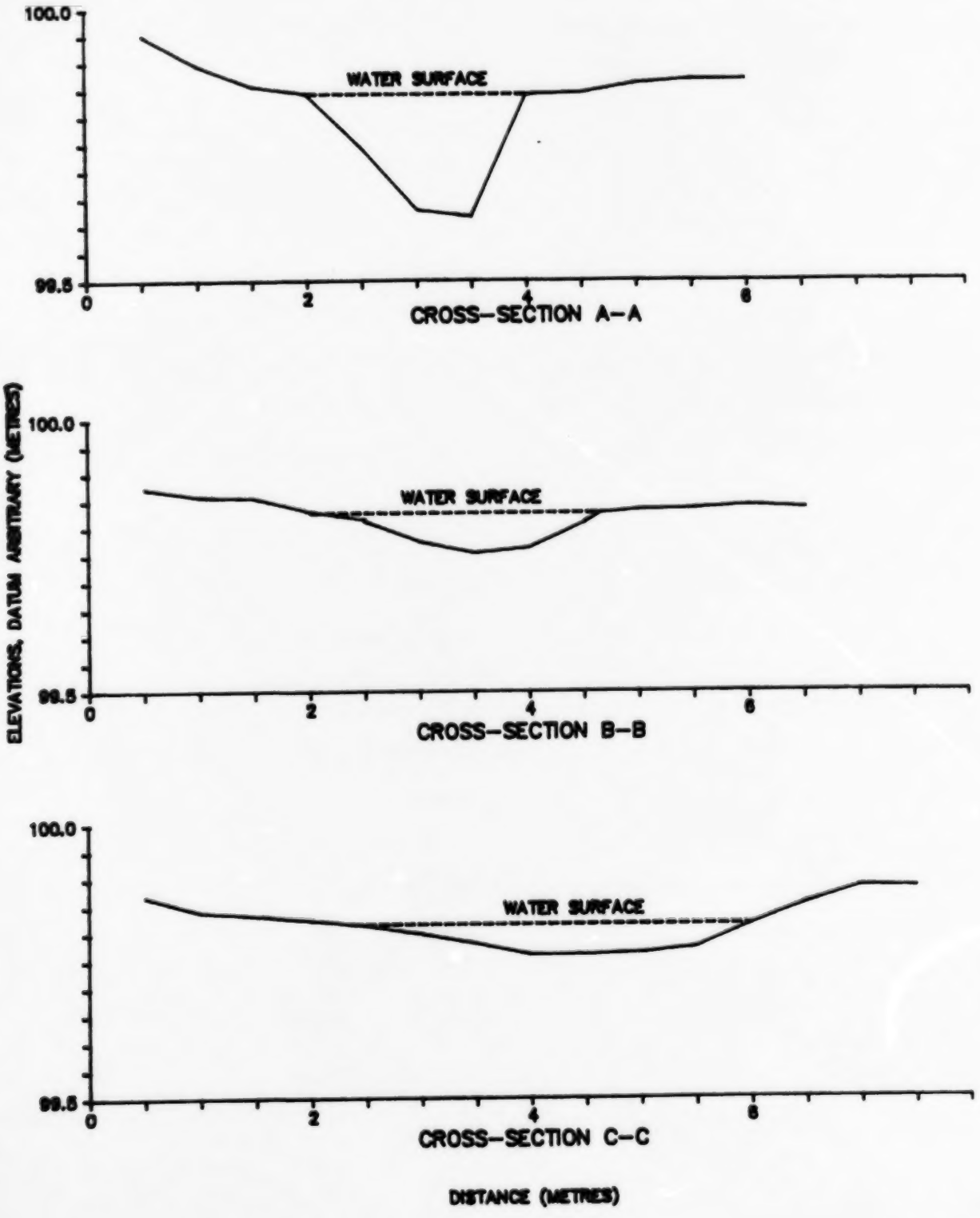


TABLE 1.95 Cross-Sectional Measurements, Transect A-A
SITE 21, UNNAMED TRIBUTARY to UPPER SOUTH
BRANCH JACQUET RIVER, August 29, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| .0 | 1.00 | 99.00 | E/W, T/W |
| 0.5 | 1.10 | 98.90 | |
| 1.0 | 1.26 | 98.34 | |
| 1.5 | 1.18 | 98.82 | |
| 2.0 | 1.00 | 99.00 | E/W, T/W |

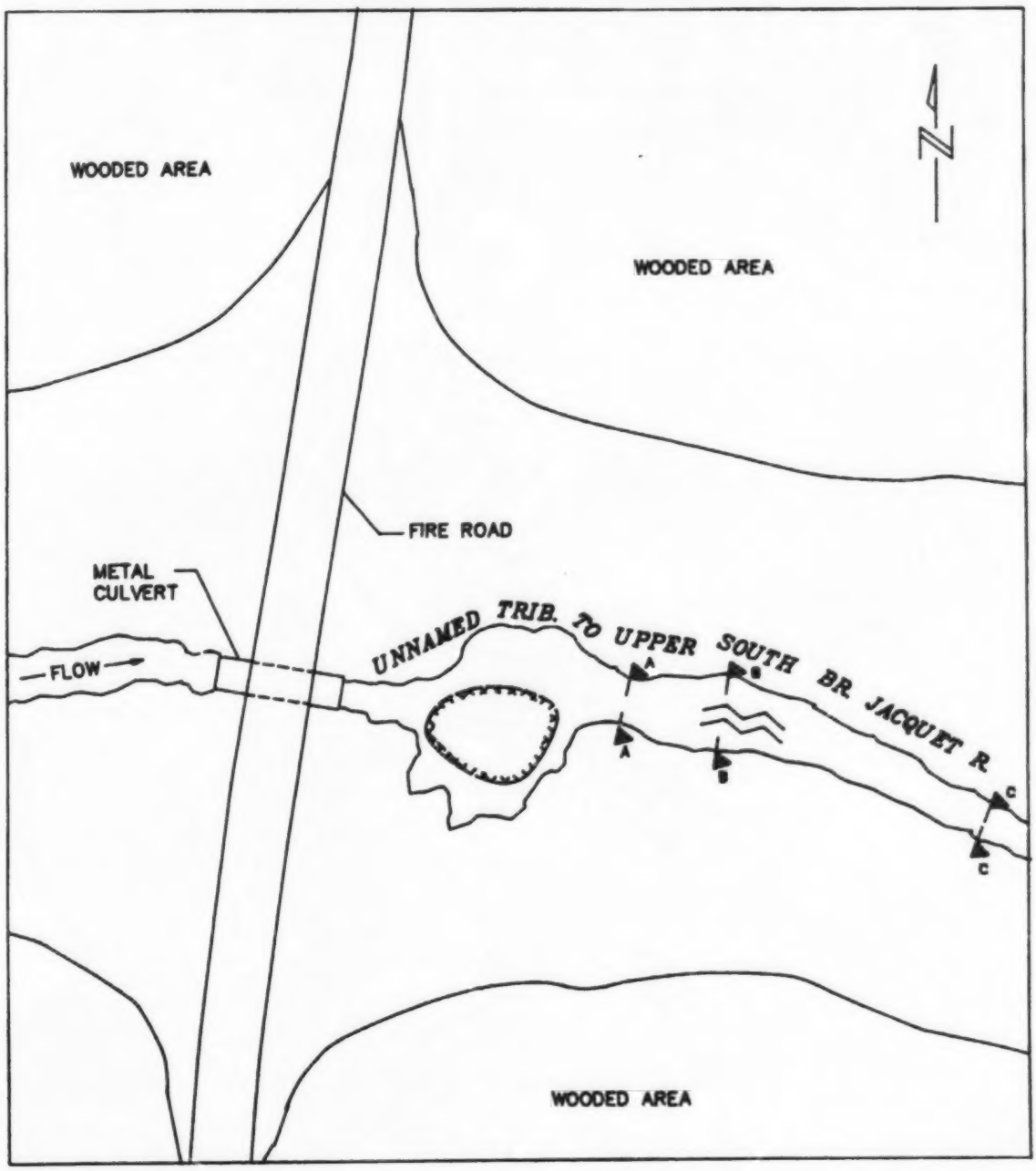
TABLE 1.96 Cross-Sectional Measurements, Transect B-B
SITE 21, UNNAMED TRIBUTARY to UPPER SOUTH
BRANCH JACQUET RIVER, August 29, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| .0 | 1.00 | 99.00 | E/W, T/W |
| 0.5 | 1.06 | 98.94 | |
| 1.0 | 1.08 | 98.92 | |
| 1.5 | 1.10 | 98.90 | |
| 2.0 | 1.05 | 98.95 | |
| 2.6 | 1.00 | 99.00 | E/W, T/W |

TABLE 1.97 Cross-Sectional Measurements, Transect C-C
SITE 21, UNNAMED TRIBUTARY to UPPER SOUTH
BRANCH JACQUET RIVER, August 29, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| .0 | 1.00 | 99.00 | T/W, E/W |
| 0.5 | 1.03 | 98.97 | |
| 1.0 | 1.04 | 98.96 | |
| 1.5 | 1.03 | 98.97 | |
| 2.0 | 1.05 | 98.95 | |
| 2.5 | 1.05 | 98.97 | |
| 3.0 | 1.03 | 98.97 | |
| 3.6 | 1.00 | 99.00 | T/W, E/W |

FIG. 1.40 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 22, UNNAMED TRIBUTARY TO UPPER SOUTH BRANCH JACQUET RIVER, AUGUST 29,1984




LEGEND

- A ▲ ▲ A — CROSS-SECTION TRANSECT
- RIFFLE AREA
- POOL
- BARRIER
- GRAVEL

SCALE 0 5 10 m (APPROX.)

TOPOGRAPHIC MAP 21-O/9

MILITARY GRID 088 859

TABLE 1.98 General Site Observations and Remarks
SITE 22, UNNAMED TRIBUTARY to UPPER SOUTH
BRANCH JACQUET RIVER, August 29, 1984

| Physical Characteristics | Description |
|---|---|
| Time | 1430 |
| Weather | sunny, clear |
| Air temperature (°C) | 28 |
| Electroseining conditions | generally good, difficult in pool |
| Instream cover | culvert |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 20/40/40 |
| Features (estimate,%) | riffle, swift run, shallow pool, deep pool |
| Aquatic vegetation | not noted |
| Stream cover | heavy alder cover |
| Banks | stable |
| Shoreline vegetation | sparse riparian grasses |
| Surrounding terrain | upland conifer, mostly fir |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 2 |
| Photographic record | FHD-84-8-NB-234 to 236 |
| General | spotcheck only |

FIG. 1.41 STREAM CROSS-SECTIONS, SITE 22, UNNAMED TRIBUTARY UPPER SOUTH BRANCH JACQUET RIVER, AUGUST 29,1984

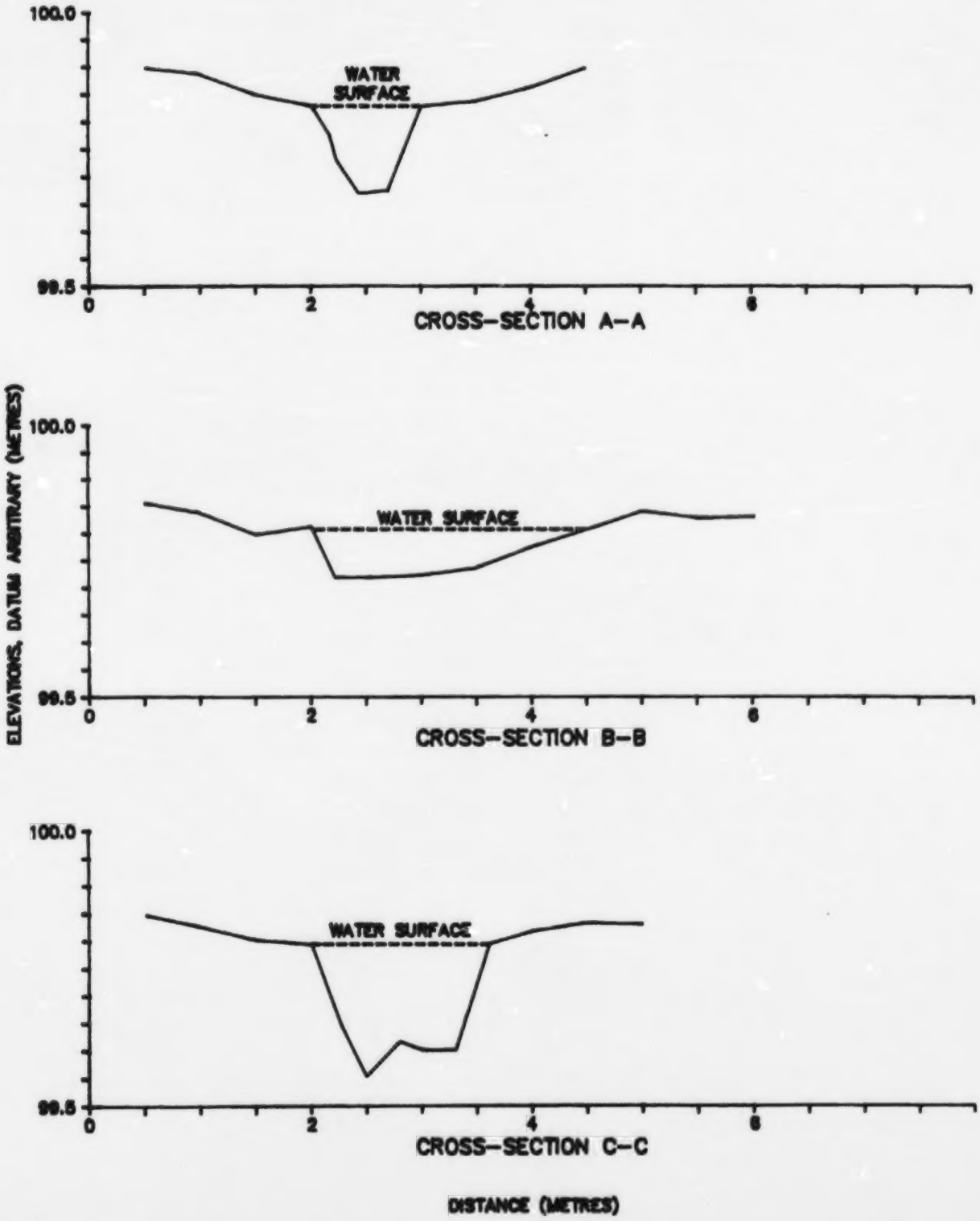


TABLE 1.99 Cross-Sectional Measurements, Transect A-A
SITE 22, UNNAMED TRIBUTARY to UPPER SOUTH
BRANCH JACQUET RIVER, August 29, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| .0 | 1.00 | 99.00 | E/W, T/W |
| 0.25 | 1.10 | 98.90 | |
| 0.50 | 1.16 | 98.84 | |
| 0.75 | 1.10 | 98.90 | |
| 1.00 | 1.00 | 99.00 | E/W, T/W |

TABLE 1.100 Cross-Sectional Measurements, Transect B-B
SITE 22, UNNAMED TRIBUTARY to UPPER SOUTH
BRANCH JACQUET RIVER, August 29, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| .0 | 1.00 | 99.00 | E/W, T/W |
| 0.5 | 1.09 | 98.91 | |
| 1.0 | 1.07 | 98.93 | |
| 1.8 | 1.06 | 98.94 | |
| 2.6 | 1.00 | 99.00 | E/W, T/W |

TABLE 1.101 Cross-Sectional Measurements, Transect C-C
SITE 22, UNNAMED TRIBUTARY to UPPER SOUTH
BRANCH JACQUET RIVER, August 29, 1984

| Chainage Ordinate (m) | Rod Reading (m) | Relative Elevation Abscissa (m) | Remarks |
|---|---|---|---|
| .0 | 1.00 | 99.00 | E/W, T/W |
| 0.25 | 1.15 | 98.85 | |
| 0.80 | 1.25 | 98.75 | |
| 0.75 | 1.10 | 98.90 | |
| 1.25 | 1.20 | 98.80 | |
| 1.60 | 1.00 | 99.00 | E/W, T/W |

FIG. 1.42 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 23, JACQUET RIVER, AUGUST 30,1984

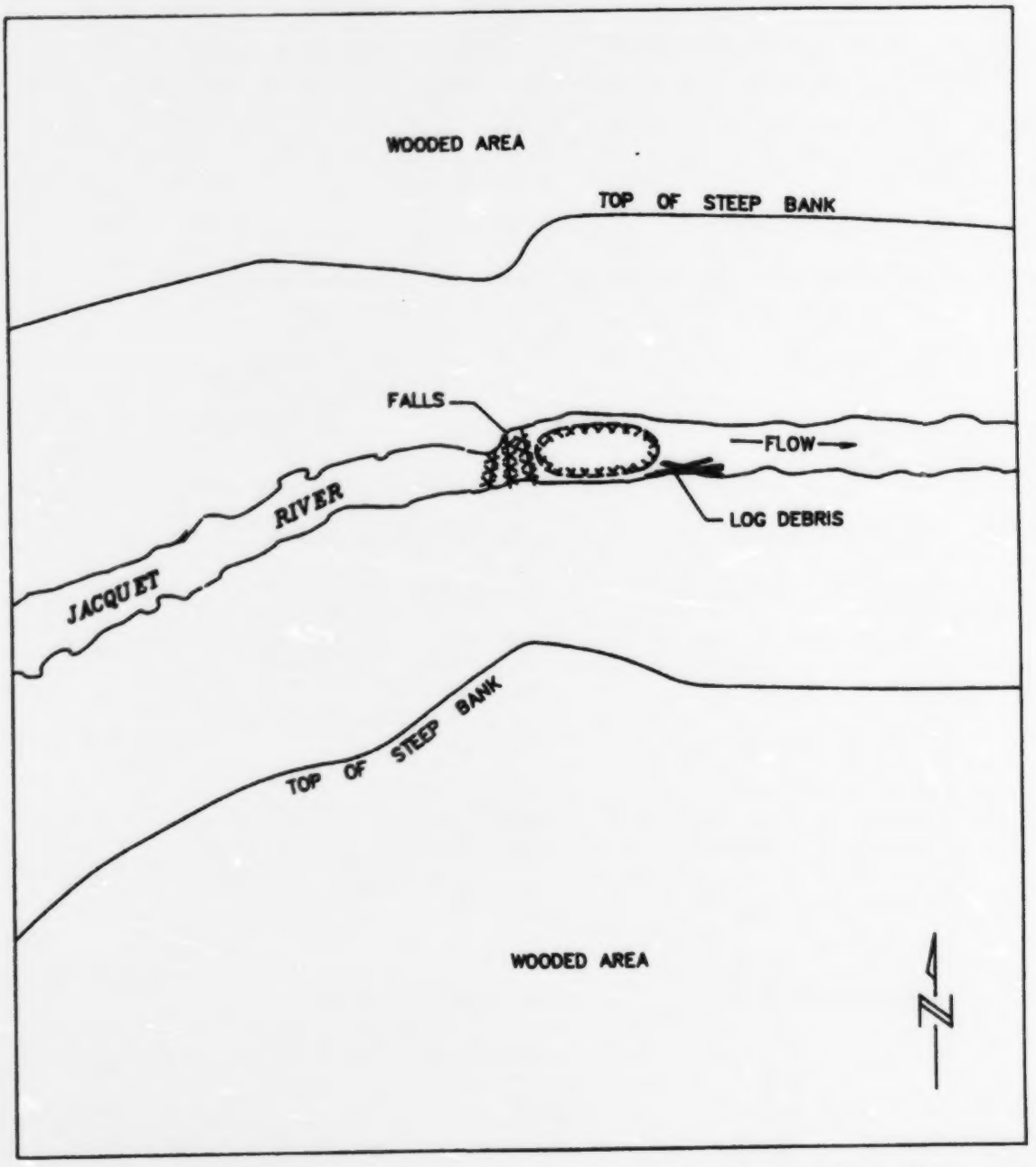


TABLE 1.102 General Site Observations and Remarks
SITE 23, JACQUET RIVER - Below Falls
August 30, 1984

| Physical Characteristics | Description |
|---|---|
| Time | not noted |
| Weather | sunny, warm |
| Air temperature (°C) | not noted |
| Electroseining conditions | good, poor in plunge pool below falls |
| Instream cover | logs from abandoned cribwork, undercut banks |
| Bottom | stable |
| Bottom type (visual est.,%) | cobble/gravel/boulder - 60/30/10 |
| Features (estimate,%) | shallow run/riffle/pool - 60/30/10 |
| Aquatic vegetation | nil |
| Stream cover | not noted |
| Banks | stable |
| Shoreline vegetation | dense alder |
| Surrounding terrain | upland conifer |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 3 |
| Photographic record | FHD-84-8-NB-P2 to P4 |
| General | spotcheck - below falls |

TABLE 1.103 General Site Observations and Remarks
SITE 23, JACQUET RIVER - Above Falls
August 30, 1984

| Physical Characteristics | Description |
|---|---|
| Time | not noted |
| Weather | warm, sunny |
| Air temperature (°C) | not noted |
| Electroseining conditions | fair |
| Instream cover | small logs |
| Bottom | stable |
| Bottom type (visual est.,%) | boulder/cobble/gravel - 10/30/60 |
| Features (estimate,%) | riffle/shallow pool/run - 40/30/30 |
| Aquatic vegetation | nil |
| Stream cover | partly open |
| Banks | stable |
| Shoreline vegetation | dense alder |
| Surrounding terrain | upland conifer<br>large boulders, steep slopes |
| Pollution sources | none identified |
| Resource utilization | unknown |
| Order stream | 3 |
| Photographic record | FHD-84-8-NB-P1 |
| General | spotcheck above falls |

FIG. 1.43 LOCATION OF HYDRAULIC AND PHYSIOGRAPHIC SAMPLING STATIONS, SITE 24, JACQUET RIVER, AUGUST 30,1984

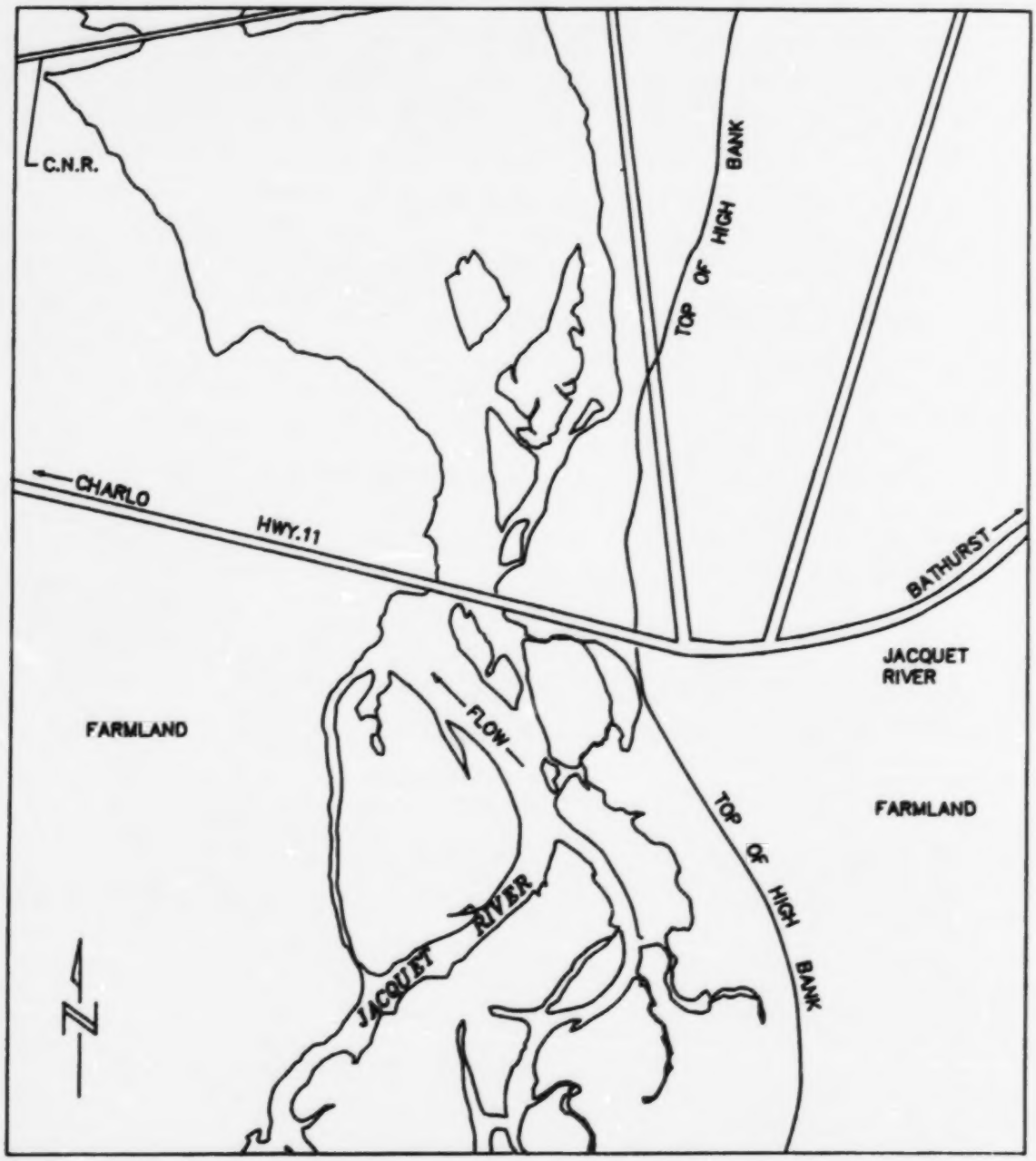
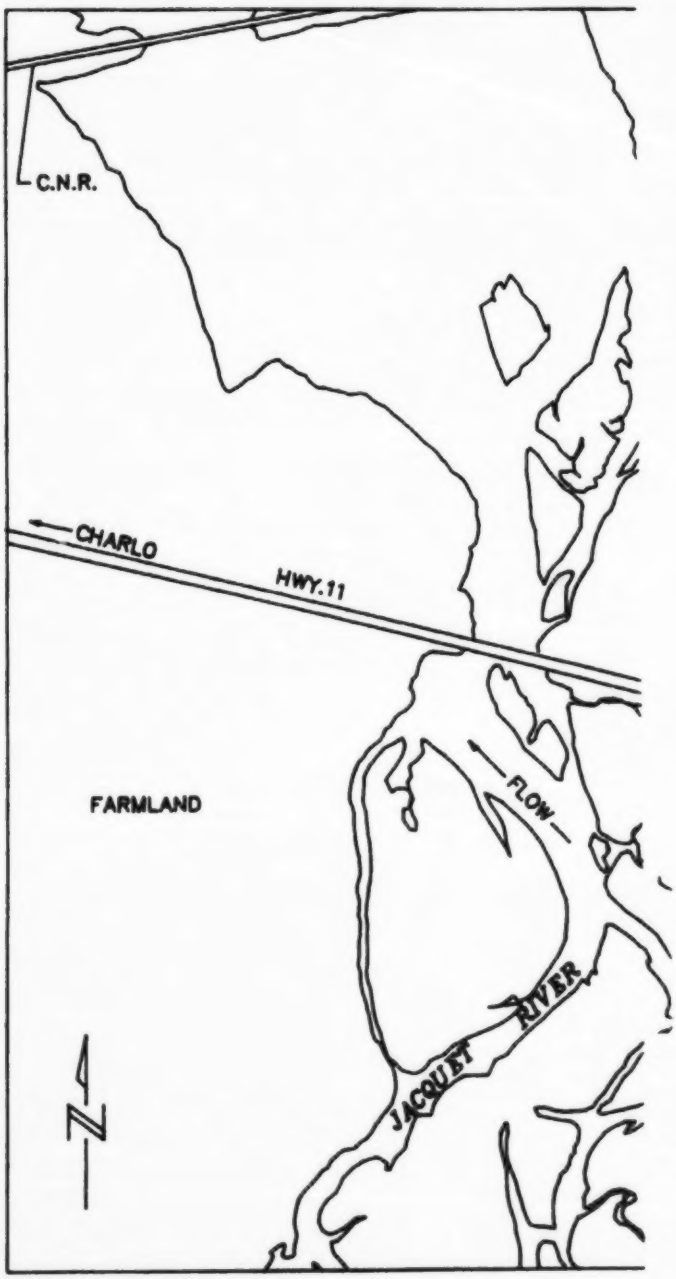


FIG. 1.43 LOCATION OF HYDRAULIC AND STATIONS, SITE 24, JACQUET I




LEGEND

CROSS-SECTION TRANSECT
RIFFLE AREA
POOL
BARRIER
GRAVEL